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ABSTRACT

This directory is designed for use by science educators in the five-state region served by the Southwest Educational Development Laboratory (SEDL): Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. Most of the resources are located in these five states, but national resources that might be of interest have also been included. In this directory, science-rich resources are defined as organizations that offer opportunities to enhance teaching and learning in the science classroom. These opportunities can include teacher workshops, tours for students, free or low-cost print materials, and many other tangibles and intangibles. Some of the science-rich resources listed could provide a scientist with whom a classroom teacher could create a partnership or other long-term association. The directory does not include teacher resources offered through formal channels such as college and university course offerings, services provided by regional education service centers and state departments of education, or publishers. The directory is organized by state with entries then arranged by category. Categories include the following: aquaria, botanical gardens, and zoos; educational organizations; museums and science centers; nature and environmental centers; professional organizations; state agencies; state-based federal programs; and university affiliates. (JRH)

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Eisenhower Southwest Consortium for the Improvement of Mathematics and Science Teaching

Directory *of* Science-Rich Resources *in the* Southwest

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The Eisenhower SCIMAST project is located in the Southwest Educational Development Laboratory (SEDL), 211 East Seventh Street, Austin, Texas 78701; (512) 476-6861.

Many of SEDL's publications are available on the Internet at the SEDL World Wide Web Site: <http://www.sedl.org/>. A few are available on the SEDL gopher site (and are also linked to the WWW site): <gopher://gopher.sedl.org/>.

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Introduction

This *Directory of Science-Rich Resources* is designed for use by science educators in the five-state region served by Southwest Educational Development Laboratory (SEDL): Arkansas, Louisiana, New Mexico, Oklahoma, and Texas. Most of the resources are located in these five states, but national resources that might be of interest have also been included.

Defining Science-Rich Resources

In this directory, science-rich resources are defined as organizations that offer opportunities to enhance teaching and learning in the science classroom. These opportunities can include teacher workshops, tours for students, free or low-cost print materials, and many other tangibles and intangibles. Some of the science-rich resources in the directory could provide a science partner with whom a classroom teacher could create a partnership or other long-term association.

Selection of Entries

More than 200 entries can be found in the directory. SEDL staff located these resources by responding to personal referrals and by using other directories (from museum associations, for example), literature collected at conferences, and telephone books. The directory does not include teacher resources offered through such formal channels as college and university course offerings, services provided by regional education service centers and state departments of education, or publishers. Although every attempt was made to compile a comprehensive collection, material has undoubtedly been omitted. A feedback form for comments and suggestions of additional entries is in the back of the directory. Please let us know of resources that should be included in future editions.

Description of Entries

Information for descriptions came through telephone interviews with staff members in each organization and review of print materials and electronic media. Every attempt was made to secure accurate, up-to-date information. Almost all of the descriptions were reviewed and edited by staff in each organization. Less than 5 percent of the entries were not returned after being sent for review but have been included in the interest of complete coverage. Information susceptible to change, such as hours of operation and names of staff, has been limited. Users are advised to contact organizations directly to verify this kind of information.

Using the Directory

The directory is organized by state with entries then arranged by category. Categories include aquaria, botanical gardens, and zoos; educational organizations; museums and science centers; nature and environmental centers; professional organizations; state agencies; state-based federal programs; and university affiliates. Users are encouraged to read across categories to expand the range of interesting opportunities.

A separate section is devoted to national organizations that may be useful to educators in the region. Many of these organizations can provide information about state or local chapters and agencies.

Entries may be located by using the table of contents, the index of entries, and the index of location and scientific discipline.

The on-line version of the directory will be available on SEDL's home page, <http://www.sedl.org/>, in early 1997. Its fields may be searched in several different ways. Directions will appear in the on-line version.

For additional information about the directory, contact Barbara Salyer at SEDL. Please complete and return the feedback form in the back of the directory so we can improve and update future editions.

Acknowledgments

Several individuals contributed to completion of the directory. Dawn McArdle and Lori Snider provided invaluable assistance with many tasks including verifying information and revising the document. Sharon Adams prepared the site maps for each state and provided editorial assistance. Farley Halverson, Gary Ketterling, and Maria Torres assisted with contacting resource sites and gathering information. Public school teachers Jesus Garcia, David Hailes, and Merlinda Rodriquez reviewed a draft of the complete document and suggested important changes. Wes Hoover, SEDL senior vice president, provided guidance over the entire project.

State Organizations

Arkansas

Sites on map are locations that can be visited. Other resources in the directory serve as sources for materials and information but are not available for on-site visits.

Fayetteville
1. University Museum

Harrisburg
2. Aviation Education Resource Center

Hot Springs
3. Mid America Science Museum

Jefferson
4. National Center for Toxicological Research

Little Rock
5. Arkansas Geological Commission
6. Arkansas Museum of Science and History
7. Arkansas Space Grant Consortium, NASA
8. Arkansas State Highway and Transportation Department
9. C.A. Vines 4-H Center
10. Children's Museum of Arkansas
11. Little Rock Zoological Gardens
12. NASA Regional Teacher Resource Center

North Little Rock
13. National Weather Service, Little Rock

Smackover
14. Arkansas Oil and Brine Museum

State University
15. Arkansas State University Museum

Map prepared by Sharon Adams and Lane Hammond

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Arkansas

Aquaria/Botanical Gardens/Zoos

Little Rock Zoological Gardens

1 Jonesboro Drive
Little Rock, Arkansas 72205
Phone (501) 666-2406
Fax (501) 666-7040

The Little Rock Zoological Gardens offers guided tours for visiting school groups and can focus the tour on such topics as endangered species, animal adaptations, reptiles, or other themes of interest. An outreach program called Creature Comforts brings live animals, such as ferrets, rabbits, birds, or snakes, to schools. During school vacations workshops are provided for children, and educational birthday parties can be scheduled at any time.

Museums and Science Centers

Arkansas Museum of Science and History

503 East 9th Street
Little Rock, Arkansas 72202
Phone (501) 396-7050
Fax (501) 396-7054

The Arkansas Museum of Science and History has permanent and temporary cultural and science exhibits. School groups can take self-guided tours of the museum or schedule cultural or science classes. Outreach includes the Neighborhood Environmental Science program (NESA), which brings live animals and activities to libraries and community centers in the summer and to schools during the academic year. Ozark Outreach offers live animal presentations in the northern parts of the state. With the National Science Foundation, the museum holds workshops to disseminate technology education materials. Teachers in central Arkansas can have monthly live animal programs in the classroom. Museum staff can also develop and present special programs based on museum collections and exhibits. In addition, learning resources—videos, slide sets, and learning boxes on social, physical, life, and earth sciences—are available. Learning boxes provide teacher guides, activity plans and materials, artifacts, and specimens. The museum's Dino Dig puzzle re-creates a paleontology dig with wooden pieces that children unearth and assemble to make a stegosaurus. The annual educator's guide describes all programs, resources, and exhibits.

Arkansas Oil and Brine Museum

3853 Smackover Highway
Smackover, Arkansas 71762
Phone (501) 725-2877
Fax none

Programs and exhibits of the Arkansas Oil and Brine Museum interpret the 1920s oil boom and the technology related to the development and application of oil and bromine resources. Guided tours begin with an auditorium program, after which visitors enter a large, darkened globe of the world and view above them the continents and highlighted oil and bromine deposits. Visitors then enter a tunnel that is a core shaft, with samples from geologic layers evident. Outdoors, Oilfield Park displays the technology of oil wells, with a range of derricks and pumps dating from the 1920s to today. The museum offers displays on both oil and bromine products (which are oxidizing agents used as additives in a variety of products, including gasoline, dishwashing soap, and orange drinks). Visitors may handle core samples and drill bits and view movies. Future plans include creation of a 1920s boomtown, an elevator that takes a 4.5-minute ride through a simulated ocean floor, and a hands-on chemistry lab. The museum has a collection of more than 550 oral history recordings to enhance the visitor's understanding of oil and brine history.

Arkansas State University Museum

P.O. Box 490
State University, Arkansas 72467
Phone (501) 972-2074
Fax (501) 972-2793

The Arkansas State University Museum has collections in natural and cultural history. Exhibits include specimens of Arkansas animals, native and migratory birds, minerals, and paleontological samples from the early Mississippian to Tertiary periods. Three suitcase exhibits can be loaned to teachers. These include fossils that students can handle and artifacts from the Arkansas shell button industry; a new kit has posters and lesson plans on dinosaurs. Children can attend discovery classes in astronomy and archaeology.

Children's Museum of Arkansas

Union Station, Suite 200
1400 West Markham Street
Little Rock, Arkansas 72201
Phone (501) 374-6655
Fax (501) 374-4746

The Children's Museum of Arkansas offers field trip programs for visiting groups. Interactive exhibits include bubbles and things that roll. Staff can enhance visits with presentations according to the interests of the teacher and students.

Mid America Science Museum

500 Mid America Boulevard
Hot Springs, Arkansas 71913
Phone (501) 767-3461
Fax (501) 767-1170

The Mid America Science Museum uses themes of energy, life, matter, and perception to organize more than 100 hands-on science exhibits for all ages. The museum also has nine loan boxes on a variety of topics, including science experiments and lesson plans. Staff can bring a Starlab planetarium to Arkansas schools and provides workshops for children each summer. The home page can be found on the World Wide Web at <http://www.hotsprings.org>.

University Museum

University of Arkansas
Museum Building, Room 202
Fayetteville, Arkansas 72701
Phone (501) 575-3466
Fax (501) 575-8766
E-mail glyoung@comp.uark.edu

Regular exhibits at the University Museum feature zoology, geology, paleontology, and anthropology, with samples from all over the world and meteorites from out of this world. The museum offers tours to school groups, and programs, including films and hands-on activities, are often available to accompany tours. Every few years the museum holds special exhibitions, such as Dynamation or a NASA exhibit, that generate teacher workshops, teleconferences, and materials to be used with the visit. A new traveling exhibit on Women in Science features female scientists from the region; special programming information will accompany that exhibit. K-8 teachers can borrow discovery boxes from the museum on such topics as birds, dinosaurs, rocks and minerals, fossils, animal tracks, archaeology, and insects. Museum staff and university specialists play an active role in the Arkansas State Science Fair. The museum can find university resource speakers and information for teachers.

State Agencies

Arkansas Archaeological Survey

P.O. Box 1249
Fayetteville, Arkansas 72702-1249
Phone (501) 575-3556
Fax (501) 575-5453
E-mail hadavis@comp.uark.edu

The Arkansas Archaeological Survey oversees the work of nine archaeological research stations around the state. Many staff members from these stations may be available to work with local schools. The state archaeologist's office has information about specific research stations. Teachers can request a packet that includes fact sheets on Indian mounds, archaeology, a timeline of Arkansas archaeological history, and other topics. Archaeologists may also be able to gather specific information for teachers and can connect them with experts in many analytic sciences.

Arkansas Forestry Commission

3821 West Roosevelt
Little Rock, Arkansas 72204-6395
Phone (501) 664-2531
Fax (501) 664-5906

The Arkansas Forestry Commission is a state leader for teacher inservice in Project Learning Tree and uses a variety of methods to enhance classroom instruction in plant science. Speakers discuss reforestation and the improvement of plant stocks through genetics. Staff can meet school groups at managed forest sites to lead comparison studies and can make individual presentations on topics such as fire safety (including the Smokey Bear program), ecology, and the use of a key to identify trees. Teachers and students can order a book on common Arkansas trees for a small fee. Staff can create information packets specific to grade level and curriculum interests for Arkansas teachers. County offices can provide guest speakers who bring videotapes and programs on water quality, urban forestry and planning, the history of logging, fire-safe landscaping, how trees grow, and other topics.

Arkansas Game and Fish Commission

2 Natural Resources Drive
Little Rock, Arkansas 72205
Phone (501) 223-6405
Fax (501) 223-6310

The Arkansas Game and Fish Commission has several wildlife programs, including wildlife enhancement school visits and Project WILD training for teachers. The commission has posters on such topics as turtles and fur-bearing animals of Arkansas; an Aquatic Resources Education kit is available for teachers. The kit contains a guide and activities to teach fishing and aquatic education. A wildlife-related videotape library is available for school programs, and guest speakers can be provided. Wildlife profile sheets present facts on specific animals.

Arkansas

Arkansas Geological Commission

3815 West Roosevelt
Little Rock, Arkansas 72204
Phone (501) 296-1877
Fax (501) 663-7360

The Arkansas Geological Commission provides school speakers on such topics as rocks and minerals and their importance and natural disasters like earthquakes and landslides, and can tailor presentations to teacher requests. Small visiting groups can handle rock materials and receive a packet with small identified rock and mineral specimens and information cards. Brochures available include one on finding diamonds at Crater of Diamonds State Park and others on crystal quartz and bauxite in Arkansas.

Arkansas Parks and Tourism, Parks Division

One Capitol Mall
Little Rock, Arkansas 72201
Phone (501) 682-1191
Fax (501) 682-1364

The Parks Division manages all of the Arkansas State Parks. The division can provide a park guide that lists all of the parks and facilities. Interpretive staff at each park can be contacted for guides to natural history in their park. On the World Wide Web the division has a home page at <http://www.ono.com/arkansas>.

Arkansas State Highway & Transportation Department

P.O. Box 2261
Little Rock, Arkansas 72203
Phone (501) 569-2571
Fax (501) 569-2698

The Arkansas State Highway & Transportation Department has an extensive staff of scientists from geology, chemistry, engineering, archaeology, and computer science. Teachers can bring school groups, K-16, to the state headquarters building for a tour of the laboratories. Brochures related to seat belts and driver safety are available, and career advice information can be provided. The department's ten district offices may provide speakers to schools.

Arkansas Water Education Team (WET) Program

8001 National Drive
Little Rock, Arkansas 72209
Phone (501) 565-7421
Fax (501) 565-3818
E-mail osborne@adpce.lrk.ar.us

The Arkansas Water Education Team (WET) Program is for middle and high school teachers who involve their students in collecting data on chemical, biological, and physical water quality over a five-year period. The data are used by state and federal agencies interested in monitoring water quality throughout the state. Arkansas WET staff also provide K-12 facilitator training for National Project WET (Water Education for Teachers), which includes a curriculum guide of classroom activities in water quality.

State-Based Federal Programs

Ag in the Classroom State Leader

Center for Economic Education,
Arkansas State University
P.O. Box 2890
State University, Arkansas 72467
Phone (501) 972-3416
Fax (501) 972-3868

Ag in the Classroom, a joint venture of the Arkansas Council on Economic Education and the Arkansas Farm Bureau, concentrates on teacher education. The materials produced emphasize economics and the history of agriculture but include technical topics as well. Many of the publications have two parts, the expendable student materials and the teacher's guide, and are produced on four levels, K-2, 4-6, secondary, and Arkansas history (5-8). Techniques, Technology, and Trade, a curriculum for grades 7-12, focuses on science and economics. A new curriculum is Agriculture and Business in Children's Literature. During 1996-97, workshops will help teachers learn how to use children's literature to integrate science, social studies, and language arts. Participants in this free workshop will receive a teacher's guide with activities, games, the literature, and other items. The program will be available nationally for cost in 1997. Teachers can also obtain materials from a media library, a library of professional materials, and a collection of teacher-prepared lessons.

Arkansas C. A. Vines 4-H Center

#1 Four-H Way
Little Rock, Arkansas 72211
Phone (501) 821-4444
Fax (501) 671-2251

The C. A. Vines 4-H Center provides children with summer learning activities that use a variety of instructional materials, some developed by the 4-H. Lessons on health, safety, and nutrition are available for some age groups. Field trips called 4-H RES-Q (Responsible Environmental Stewardship Quest) are available for fourth through eighth graders in programs of one, two, and three days. A planning guide helps prepare students for the field trip.

Arkansas Space Grant Consortium, NASA

University of Arkansas at Little Rock
College of Science and Engineering Technology
Little Rock, Arkansas 72204-1099

Phone (501) 569-8212
Fax (501) 569-8039
E-mail northrop@UALR.edu

The planetarium at the University of Arkansas at Little Rock has a NASA Teacher Resource Center, with slides, videos, and teaching materials from NASA and the Federal Aviation Administration. The planetarium also has a K-12 program.

Aviation Education Resource Center

Crowley's Ridge Education Cooperative
P.O. Box 377
Harrisburg, Arkansas 72432

Phone (501) 578-5426
Fax (501) 578-5896
E-mail lmidkiff@crec.k12.ar.us

The Aviation Education Resource Center is a repository for Federal Aviation Administration K-12 curriculum materials on aerospace and aviation across all disciplines. Materials available to teachers include videotapes, lesson plans, and demonstrations on principles related to the science of flight.

NASA Regional Teacher Resource Center

University of Arkansas at Little Rock
Friebourgh Hall, Room 215
2801 South University
Little Rock, Arkansas 72204

Phone (501) 569-3259
Fax (501) 569-3314
E-mail jowilliams@ualr.edu

The NASA Regional Teacher Resource Center, serving the state, is involved in teacher inservice, including summer workshops: Project First Star, a program for K-8 teachers that stresses the concepts of astronomy, and Project M-PACE, a program for 7-12 teachers that involves a cross-disciplinary study of math, physics, chemistry, and earth sciences. Teachers have access to NASA videos, audio recordings, and lesson plans. The University of Arkansas at Little Rock Planetarium is available for school and public group programs.

National Center for Toxicological Research

3900 NCTR Drive
Jefferson, Arkansas 72079

Phone (501) 543-7516
Fax (501) 543-7576
E-mail sdoublas@fdant.nctr.fda.gov

A research center for the U.S. Food and Drug Administration (FDA), the National Center for Toxicological Research (NCTR) conducts peer-reviewed scientific research that supports and anticipates the FDA's current and future regulatory needs, specifically with research designed to define biological mechanisms underlying the toxicity of products regulated by FDA. NCTR carries out investigations into the causes of cancer, genetic change, reproductive and developmental effects, and behavioral changes related to food, cosmetics, and medicine. NCTR staff have expertise in chemistry, biology, psychology, genetics, physiology, pharmacology, microbiology, biochemistry, and statistics. Staff are involved as guest speakers, science fair judges, and science partners with local high schools. NCTR promotes educational programs, including a summer student research program for college students and local high school and junior high school teachers in which these individuals upgrade their proficiency in science and research skills through work as interns in NCTR labs. High school students may also do summer research work in NCTR labs facilitated by high school teachers.

National Weather Service, Little Rock

8400 Remount Road
North Little Rock, Arkansas 72118

Phone (501) 834-9102
Fax none

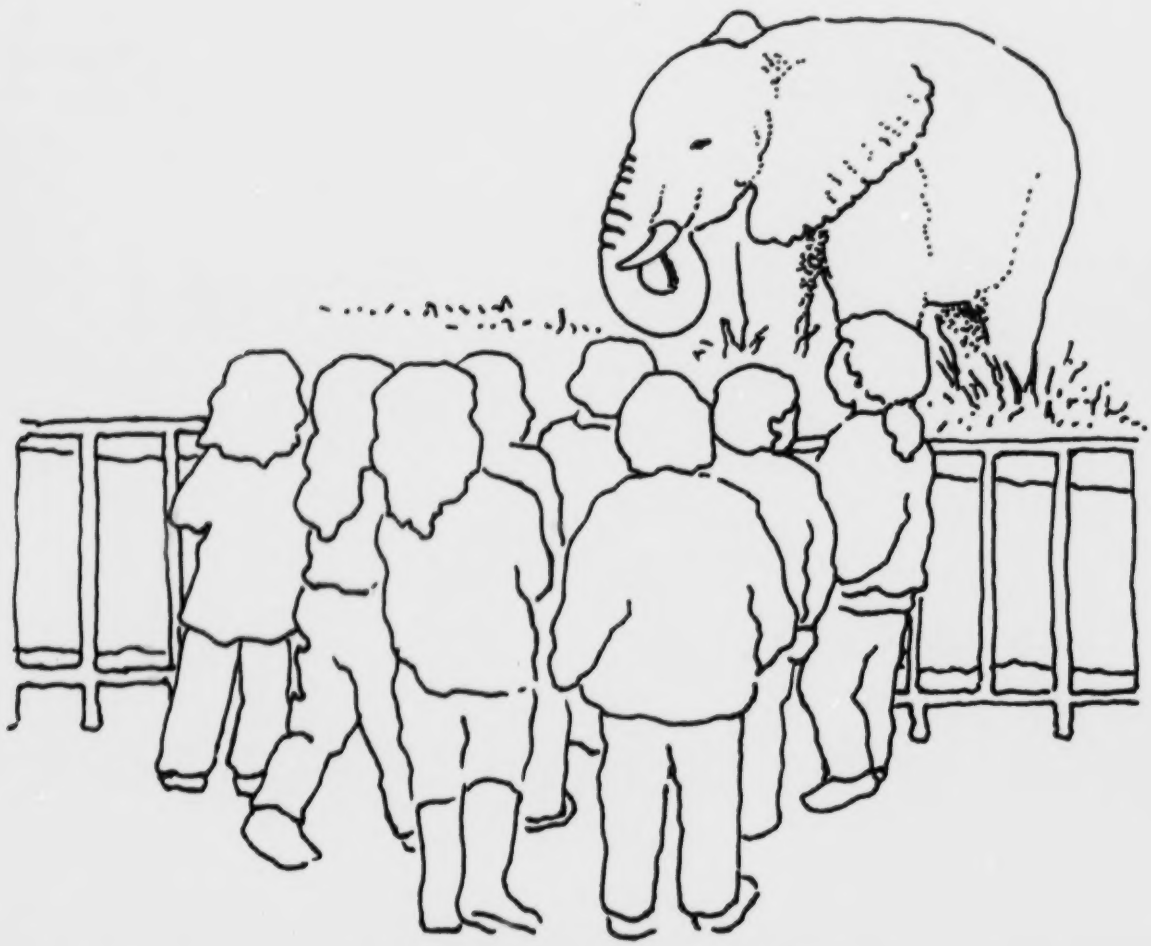
The North Little Rock Office of the National Weather Service brings meteorology information to students and teachers in its area. For fifth-grade and older students, staff demonstrates technical applications that are used to prepare weather forecasts. In advance of the visit, the service can lend teachers an audio tape and slide program that introduces the technical concepts that will be learned on-site. This program was prepared by a teacher summer intern. The service staff keeps science teachers informed about professional meteorology activities and participates in science teacher organization conferences. Speakers are available for school talks, and communication with individual teachers can guide the development of programs tailored to specific needs and interests. Teachers should ask for the warning coordinator meteorologist or the science officer when calling for information.

Arkansas

Natural Resources Conservation Service, Arkansas Office

U.S. Department of Agriculture
700 West Capitol Avenue
Federal Building, Room 5404
Little Rock, Arkansas 72201
Phone **(501) 324-5464**
Fax **(501) 324-6138**

Arkansas Natural Resources Conservation Service (NRCS; formerly the Soil Conservation Service) has a limited supply of free conservation-related posters and K-12 classroom activities. Teachers may borrow slide presentations on dust bowl history, backyard bird habitat, snakes, groundwater, water conservation, and other topics. Staff at district offices can provide technical assistance and programs to schools in their counties. This assistance can include school visits and assistance with setting up conservation areas on school sites. NRCS welcomes teachers to sign up as Earth Team volunteers to receive recognition for conservation education activities over and above the regular classroom curriculum.



Louisiana

Sites on map are locations that can be visited. Other resources in the directory serve as sources for materials and information but are not available for on-site visits.

Baker
1. Greater Baton Rouge Zoo

Baton Rouge
2. Aviation Education Resource Center
3. Louisiana Arts & Science Center
4. Louisiana Energy & Environmental Resource & Information Center
5. L.S.U. Museum of Natural Science

Bossier City
6. NASA Regional Teacher Resource Center

Lafayette
7. Lafayette Natural History Museum, Planetarium & Acadiana Nature Station

Lake Charles
8. Children's Museum of Lake Charles

New Orleans
9. Aquarium of the Americas
10. Audubon Zoological Garden
11. Lousiana Children's Museum
12. Louisiana Nature Center

Shreveport
13. Louisiana State Exhibit Museum
14. Sci-Port Discovery Center

Ville Platte
15. Louisiana Arboretum

Maps prepared by Sharon Adams and Lisa Hammond

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Louisiana

Aquaria/Botanical Gardens/Zoos

Aquarium of the Americas

1 Canal Street
New Orleans, Louisiana 70130
Phone (504) 565-3814
Fax (504) 565-3025

New Orleans' Aquarium of the Americas has five main theme galleries: the Caribbean, Amazon, Mississippi River, the Gulf of Mexico, and a Living in Water gallery. Sharks, a colony of penguins, and a touch pool are among the attractions. Daily shows are scheduled on-site for school groups and other visitors. AquaVan brings to area schools such offerings as a skit program on wetlands and No Bones About Them, a presentation on aquatic invertebrates. Teacher workshops are an important part of aquarium outreach with such sessions as Rainforests: Who Needs Them? and Life at the Top, which is about sharks. Members have access to family Saturday workshops with live animals and to lectures and special events for adults in the evening.

Audubon Zoological Garden

6500 Magazine Street, Audubon Park
P.O. Box 4327
New Orleans, Louisiana 70178
Phone (504) 861-5103
Fax (504) 861-2426

The Audubon Zoological Garden offers field trips for school groups. The Betty Wisdom Resource Room, which includes books, posters, videos, print models, skulls, and skins for research and teaching, is open to students and teachers by appointment. Teachers can check out certain artifacts for classroom use. Teacher workshops focus on providing hands-on activities to enhance students' grasp of such natural science concepts as habitat ecology, conservation, and background information on Audubon animals—in the zoo and in the wild. Teachers who attend workshops receive one-year's free admission for themselves and chaperones accompanying their classes to the zoo.

Greater Baton Rouge Zoo

P.O. Box 60
Thomas Road, in Greenwood Park
Baker, Louisiana 70704
Phone (504) 775-3877
Fax none

The Greater Baton Rouge Zoo is located in Greenwood Park, between Baton Rouge and Baker. Staff conducts on-grounds tours and presentations on such topics as endangered species, predators, and "Critter Cuisine," which includes a visit to the animal food kitchen. Saturday classes are held for families, adults, and children, and an Explorer Post is sponsored on-site. Outreach programs include teacher workshops on how to use the zoo to enhance classroom learning and school presentations with slide shows, confiscated wildlife products, and live animals.

Louisiana Arboretum, State Preservation Area

4213 Chicot Park Road
Ville Platte, Louisiana 70586
Phone (318) 363-2403
Fax (318) 363-6289

The Louisiana Arboretum, located in Chicot State Park, provides a site for approved botanical research. An application for research should be sent to the chief of operations, Office of State Parks, P.O. Box 44426, Baton Rouge, LA 70804. Teachers and students can take a self-guided tour at the arboretum.

Museums and Science Centers

Children's Museum of Lake Charles, Inc.

925 Enterprise Boulevard
Lake Charles, Louisiana 70601
Phone (318) 433-9420
Fax (318) 433-0144

The Children's Museum of Lake Charles emphasizes arts, science, culture, and folklore with a variety of exhibits and programs. A-Maze-ing Science, for example, is a crawl-through maze. Hands-on learning stations with computers, TV cameras, and science materials are found throughout the facility. Visiting student groups can take tours designed to fit certain topics and projects; teachers may occasionally obtain materials before class visits. A program with live animals travels to elementary schools, and a few museum-in-a-suitcase kits are available for teacher use. An annual mailing brings programs and exhibits to the attention of all teachers in Calcasieu Parish. Science mini-camps are offered during school vacations; the museum also hosts scout and 4-H events and birthday parties.

L.S.U. Museum of Natural Science

119 Foster Hall
Louisiana State University
Baton Rouge, Louisiana 70803
Phone (504) 388-2855
Fax (504) 388-3075

The Museum of Natural Science at Louisiana State University consists of mounted animal displays and dioramas of past and present Louisiana natural environments, as well as environments from outside the state. The museum includes the Hall of Birds and displays of reptiles, amphibians, and mammals of Louisiana. Education staff host field trips and provide basic or special-topic presentations to scheduled groups of all ages. Small groups can take a guided tour through the site. Before their class visit teachers can receive packets used to facilitate field trip learning. Monthly Saturday programs bring special topics, such as astronomy, rock hunting, and conservation, to a public audience.

Lafayette Natural History Museum, Planetarium, and Acadiana Nature Station

637 Girard Park Drive
Lafayette, Louisiana 70503
Phone (318) 268-5544
Fax (318) 268-5464

The Lafayette Natural History Museum features live animals and science discovery activities. All museum, planetarium, and nature station programs must be scheduled in advance. School groups are led by staff or volunteers through permanent and traveling exhibits. The planetarium has an exhibit on meteorites and provides both shows for specific groups and public programs that frequently include stargazing. The nature station has interactive exhibits, nature trails, and live animals; it also offers interpretive programming. Call the nature station at (318) 261-8448.

Louisiana Arts and Science Center

P.O. Box 3373
100 South River Road
Baton Rouge, Louisiana 70821
Phone (504) 344-5272
Fax (504) 344-9477

The Louisiana Arts and Science Center (LASC) is home to a Challenger Learning Center and interactive science exhibits and programs for all ages. The Challenger Learning Center provides teacher workshops and hosts student field trips in which classes engage in a two-hour mission simulation requiring team problem solving and cooperation. These missions are available to corporate groups and for birthday parties, as well. The Science Station is a gallery of hands-on physical science activities with an adjoining classroom. The museum is partner with the National Science Foundation and the local Girl Scout Council in hosting frequent Science Sleepovers. Space-related shows are held for visiting groups in the LASC auditorium. Teacher workshops include Inquiry in the Classroom and Twenty Things to Do with a Film Canister. Outreach programs include school assemblies and classroom visits with hands-on science activities in such topics as electricity, magnetism, and solids, liquids, and gases. The Youth Alive! program brings "big sister" pairs of at-risk students to a summer science camp and provides monthly follow-ups during the school year.

Louisiana Children's Museum

420 Julia Street
New Orleans, Louisiana 70130
Phone (504) 586-0725
Fax (504) 529-3666

The Louisiana Children's Museum has hands-on exhibits for children ages 1-12. The Lab is devoted to math, science, and physics exploratory stations, including a giant microscope and an air hockey table adapted for experimentation with angular geometry. Two programs for visiting groups are It's a Phase, about states of matter, and Stuffee, an eleven-foot doll with removable pillow organs. Three programs are used for school outreach: an inflatable globe that children can enter to learn about geography; Little Stuffee, a seven-foot doll whose removable organs accompany lessons on organ donation; and the Science Explorers video series that can be loaned to schools. The Louisiana Children's Museum occasionally hosts teacher workshops and has a teacher's guide to the museum describing ways to coordinate museum visits with classroom lessons. The museum has a home page on the World Wide Web at <http://www.lcm.org>.

Louisiana State Exhibit Museum

P.O. Box 38356
3015 Greenwood Road
Shreveport, Louisiana 71133
Phone (318) 632-2020
Fax (318) 632-2056

The Louisiana State Exhibit Museum has anthropological and archaeological collections from prehistoric to historic periods of occupation in northwestern Louisiana. Dioramas display agriculture, technology, and industry in Louisiana. A publication on the Caddo Indians is available for teachers.

Louisiana

Sci-Port Discovery Center

528 Commerce
Shreveport, Louisiana 71101
Phone (318) 424-3466
Fax (318) 222-5592

Sci-Port Discovery Center consists of hands-on exhibits with extensive outreach and links to formal education. Alcohol and the Brain is an exhibit that can be used to train middle school life science teachers in Caddo and Bossier parishes. Carried in a van, this exhibit includes a teacher packet, computers, touch pads, an electric question board, and a human brain. Students manipulate conditions of simulated alcohol use to learn its effects on driving ability. The center also trains teachers to use a StarLab portable planetarium and can send a NASA van to schools. Teacher workshops, provided through collaboration with the Louisiana Systemic Initiative Project, familiarize educators with exhibits and activities before and after class visits. School links are strengthened through an ambassadors program, a network of contacts who spread news of the center to other teachers and in exchange receive a free admission card for themselves and a guest. The center also provides public Saturday programming.

Nature and Environmental Centers

Louisiana Nature Center

P.O. Box 870610
5600 Block of Read Boulevard in Joe Brown Park
New Orleans, Louisiana 70187-0610
Phone (504) 246-5672
Fax (504) 242-1889

The Louisiana Nature Center, a facility managed by the Audubon Institute, is an 87-acre site for school visits and discovery programs. Programs include A Tale of Tails for prekindergarten and Wetland Ecology for high school students. Overnights at the center are available to schools and scout groups. A science resource center offers teachers activity books and curriculum ideas for on-site use and videos that can be borrowed. Staff facilitate monthly teacher workshops and bring presentations with live animals to schools.

Professional Organizations

Louisiana State Medical Society

3501 North Causeway Boulevard, Suite 800
Metarie, Louisiana 70002
Phone (504) 832-9815
Fax (504) 833-7685
E-mail lsms@accesscom.net

The Louisiana State Medical Society provides teachers with manuals and guidelines for setting up health education programs. Information on smoking and tobacco use, substance abuse, and adolescent sexuality is included. The organization can also connect teachers to their parish medical societies for additional resources.

State Agencies

Louisiana Department of Natural Resources

625 North 4th Street
Baton Rouge, Louisiana 70804
Phone (504) 342-4500
Fax (504) 342-3442

The Louisiana Department of Natural Resources can provide brochures explaining its programs, including coastal and wetlands management, mineral resources, and energy facts. A newsletter, Coast Lines, is available to Louisiana teachers, and videotapes on related topics may be provided, depending on supplies. The home page of the department is <http://www.dnr.state.la.us/>.

Louisiana Department of Transportation and Development

1201 Capitol Access Road
Baton Rouge, Louisiana 70802
Phone (504) 379-1202
Fax (504) 379-1863

The Louisiana Department of Transportation and Development has a large staff of civil engineers who can field questions from individual teachers and students. Also, a packet of maps and state information can be sent to teachers. Maps of current construction projects can be provided to teachers who want information on state engineers working in their locales. The department's home page is on the World Wide Web at <http://www.dotd.state.la.us/>.

Louisiana Department of Wildlife and Fisheries
Library, Education Section

P.O. Box 98000
Baton Rouge, Louisiana 70898-9000
Phone (504) 765-2934
Fax (504) 763-3568

The Department of Wildlife and Fisheries Library can provide teachers with brochures and videos on a variety of topics related to natural sciences. A free catalog describes these free items. The office is located at 2000 Quail Drive (70808) and has a home page at <http://www.wlf.state.la.us/>.

Louisiana Energy and Environmental Resource & Information Center

One East Fraternity Circle
Louisiana State University
Baton Rouge, Louisiana 70803-0301
Phone (504) 388-4600
Fax (504) 388-4541

Louisiana Energy and Environmental Resource & Information Center (LEERIC) provides K-12 science teachers in Louisiana with videos, lesson plans, and science fair guides and has a page on the World Wide Web at <http://www.leeric.lsu.edu>. This site has lesson plans, descriptions of hands-on programs, a place to request information, and newsletters that can be printed. Staff librarians will assist teachers in finding resources and information and can provide training in resource finding, as well. In Louisiana, call LEERIC at (800) 256-ERIC.

State-Based Federal Programs

Ag in the Classroom State Leader

Louisiana Farm Bureau Federation
P.O. Box 95004
Baton Rouge, Louisiana 70895-9004
Phone (504) 922-6200
Fax (504) 922-6229

The Louisiana Farm Bureau Ag in the Classroom program provides resource materials on the history, geography, economics, and ecology of agriculture for students in upper elementary and middle school. These materials include videos and print materials and lesson plans on milk and cotton production, Thanksgiving, and research projects for seventh through twelfth graders.

Aviation Education Resource Center

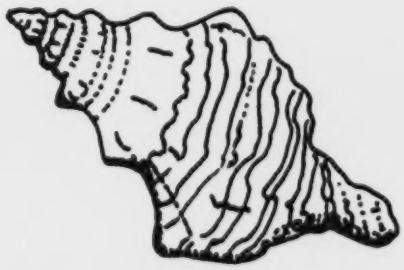
Louisiana Transportation Research Center at Louisiana State University
4101 Gourrier Avenue
Baton Rouge, Louisiana 70808
Phone (504) 767-9127
Fax (504) 767-9108

The Aviation Education Resource Center is a library of free curriculum materials on flight and aerospace that have been provided by the Federal Aviation Administration. Teachers can acquire lesson plans, activities, and pamphlets related to aviation.

Louisiana 4-H State Leader

Louisiana Cooperative Extension Service, LSU Agricultural Center
P.O. Box 25100
Baton Rouge, Louisiana 70894-5100
Phone (504) 388-4141
Fax (504) 388-2478

The Louisiana Cooperative Extension Service (LCES) develops and provides lesson plans for 4-H agents and volunteers to use in each parish. Most of these curriculum materials are written for fourth to sixth graders but can easily be adapted for use with other age groups, including adults. They usually involve activities for hands-on learning, such as experiments, games, and demonstrations, all with readily available materials. Topics cover a wide range and include drinking water, wastewater, solid waste, household hazardous waste, septic systems, wildlife, aquaculture, food safety, and alternative energy sources. Most of these are available as project books covering year-long activities; 4-H members can participate in local and interstate award programs to recognize their work. Parish 4-H agents can seek assistance with educational programs from additional LCES professionals and others with expertise in many subjects. Agents know sites for field trips and special programs, including day camps, where scientific topics are taught. Science teachers can also contact a national clearinghouse for curriculum produced by 4-H offices in other states.



Louisiana

Louisiana Space Grant Consortium, NASA

Louisiana State University,
Department of Physics and Astronomy
277 Nicholson Hall
Baton Rouge, Louisiana 70803-4001

Phone (504) 388-8697
Fax (504) 388-1222
E-mail kjohnson@rouge.phys.lsu.edu

The Louisiana Space Grant Consortium (LSGC) supports basic research for undergraduate and graduate students and K-12 outreach activities in mathematics and science. Louisiana teachers can apply for sponsorship to attend NASA workshops and courses offered around the country and can receive information about LSGC workshops in their vicinity. Staff can provide networking information and mathematics and science information from files and from the Internet. The LSGC home page on the World Wide Web is at <http://phacts.phys.lsu.edu>, and the National Space Grant Consortium home page can be reached at <http://deimos.ucsd.edu/space_grant/NASAspacegrant.html>.

NASA Regional Teacher Resource Center

Bossier Parish Community College
Telecommunication Center
2900 Douglas Drive
Bossier City, Louisiana 71111

Phone (318) 746-7754
Fax (318) 747-3364

The NASA Regional Teacher Resource Center at Bossier Parish Community College has a library of free materials for teachers. Posters, pamphlets, and lesson plans on such topics as space suits and living in space are free. Bring a blank videotape to make copies of the many NASA titles. All materials are cataloged electronically. Staff from the Teacher Resource Center can bring space-related activities to local elementary classrooms. The Telecommunications Center also broadcasts downlinked satellite programming to Bossier Parish residents; programs include NASA-Select TV, with live round-the-clock coverage of shuttle missions, and other programs available from news networks and informal science sources.

Natural Resources Conservation Service, Louisiana State Office

U.S. Department of Agriculture
3737 Government Street
Alexandria, Louisiana 71302

Phone (318) 473-7762
Fax (318) 473-7682

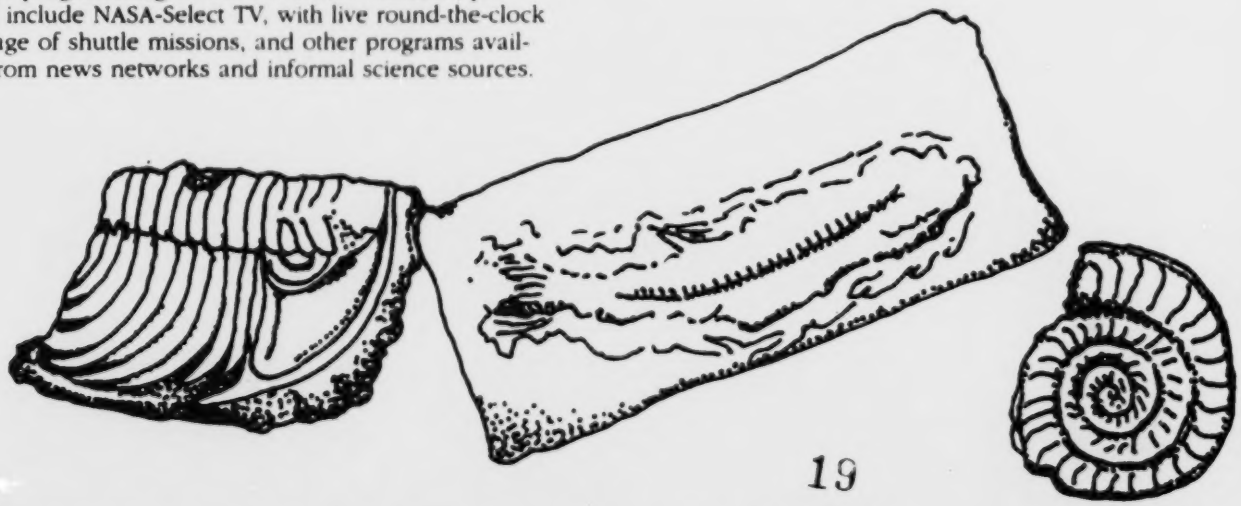
The U.S. Department of Agriculture Natural Resources Conservation Service has numerous free natural resource materials for teachers. Fact sheets cover such topics as natural resource conservation and soil and water relationships; one sheet includes the "apple" activity used to demonstrate the amount of the earth that is usable agricultural land. A set of five sheets of information on nonpoint source pollution is designed for high school students. Various color publications are national, regional, or local in scope. A Project Earth teacher guide is a 20-chapter book of activities, projects, information, and diagrams covering a range of topics on natural resources. A Soil Conservation Education Kit and 45 environmental lesson plans have information on soil conservation, with activities for different grade levels. As time allows, district conservationists from the field offices around the state make presentations in schools and work with teachers on natural resource conservation. They also participate in Forest Awareness Week, organizing activities and field trips into forested areas for schoolchildren.

Strategic Petroleum Reserve, U.S. Department of Energy

900 Commerce Road East
New Orleans, Louisiana 70123

Phone (504) 734-4312
Fax (504) 734-4427

The Louisiana Strategic Petroleum Reserve is one of several U.S. locations where petroleum is stored in underground salt domes for emergency use. Staff can provide classroom speakers and brochures that explain the agency's mission.



New Mexico

Sites on map are locations that can be visited. Other resources in the directory serve as sources for materials and information but are not available for on-site visits.

Alamogordo
1. Space Center

Albuquerque
2. Explora Science Center
3. Inhalation Toxicology Research Institute
4. Institute of Meteoritics Meteorite Museum
5. Maxwell Museum of Anthropology
6. Museum of Southwestern Biology
7. NASA/FAA Regional Teacher Resource Center
8. National Atomic Museum
9. New Mexico Museum of Natural History and Science
10. Phillips Laboratory
11. Rio Grande Zoological Park
12. Sandia National Laboratories

Church Rock
13. Red Rock Museum

Deming
14. Deming Luna Mimbres Museum

Las Cruces
15. Las Cruces Museum of Natural History
16. New Mexico Space Grant Consortium

Los Alamos
17. Bradbury Science Museum
18. Los Alamos National Laboratory

Portales
19. Natural History Museum

Roswell
20. Roswell Museum and Art Center

Santa Fe
21. Museum of New Mexico: Office of Archaeological Studies
22. Santa Fe Children's Museum

Santa Teresa
23. War Eagles Air Museum

Socorro
24. New Mexico Bureau of Mines and Mineral Resources
25. National Radio Astronomy Observatory

Map prepared by Sharon Adams and Jane Hammond

New Mexico

Aquaria/Botanical Gardens/Zoos

Rio Grande Zoological Park

903 10th Street, SW
Albuquerque, New Mexico 87102
Phone (505) 843-7413
Fax (505) 764-6243

The Rio Grande Zoological Park provides two-hour guided tours for school groups and interactive Discovery Station exhibits staffed by volunteers at various locations on the grounds. Special-needs groups can use AMAZE boxes, which are hands-on experiences with zoo collections. The zoo leads a local and statewide Zoo to You program that features presentations for K-6 students on reptiles and amphibians, endangered species, birds, and mammals. Statewide outreach brings this program to rural settings and small towns. Teachers can receive training and borrow a Suitcase for Survival, a kit about endangered species.

Museums and Science Centers

Bradbury Science Museum

P.O. Box 1663, Mail Stop C330
15th Street at Central Avenue
Los Alamos, New Mexico 87545
Phone (505) 667-4444
Fax (505) 665-6932

The Bradbury Science Museum, a component of Los Alamos National Laboratory, has exhibits that explain the role and history of the laboratory. The museum includes more than 40 high-technology interactive exhibits featuring videos, computers, and science demonstrations. Artifacts from the Manhattan Project are also displayed. Science educators at the museum give hands-on demonstrations for visitors and school groups. A program for sixth graders, Science Beginnings at the Laboratory, is led by laboratory researchers. The museum is currently developing TechLab, a gallery where visitors may experiment with science. A museum educator is available to provide teachers with customized programs that match curricula. The free museum is open daily all year. Additional museum programs include a science theater featuring live performances (Saturday afternoons), science camps, two- to five-day outdoor summer camps for seven-to sixteen-year-olds (nominal fee charged), and special events, such as High-Tech Halloween. The museum has a home page at <http://www.lanl.gov/Public/Museum>.

Deming Luna Mimbres Museum

301 South Silver
Deming, New Mexico 88030
Phone (505) 546-2382
Fax none

Visitors to the Deming Luna Mimbres Museum find a gem and mineral room with a rock from each state; a large collection of semi-precious stones, such as agate, jasper, and obsidian; a mammoth tooth; and other fossils. The museum also has a significant collection of Indian artifacts from the Mimbres and other pre-Columbian New Mexico cultures. The medical room contains exhibits of historic tools and devices used by doctors in the past, including two iron lungs that were used during the 1940s and 1950s polio epidemic. With advance request, guided tours are available.

Explora Science Center

40 First Plaza, Suite 68
Albuquerque, New Mexico 87102
Phone (505) 842-6188
Fax (505) 842-0607
E-mail explora@RT66.com

Explora Science Center provides more than 30 hands-on, interactive science exhibits for visitors; with advance registration school groups admitted free. After an orientation, groups can follow self-directed tours throughout the science center. Throughout the day, live science demonstrations cover such topics as combustion and optics. Teacher workshops introduce kits on bridges, scientific illustrations, patterns and symmetry, and Greek temple architecture developed to integrate science and art. These kits can be checked out by trained teachers. The featured exhibition at Explora is Interactions: The Art of Science, a collection of interactive art pieces that teach science; Bits and Pieces, a hands-on exploration of how computers work, will open in October 1996.

Institute of Meteoritics Meteorite Museum

University of New Mexico
200 Yale, NE, Northrop Hall
Albuquerque, New Mexico 87131
Phone (505) 277-1644
Fax (505) 277-3577
E-mail scoulie@unm.edu

The Institute of Meteoritics at the University of New Mexico is devoted to research and teaching in the fields of meteoritics and planetary sciences. Materials on display include the oldest collected rocks in the solar system, fragments of many different kinds of asteroids, a one-ton stone meteorite that fell in Kansas in 1948, and 30 meteorites that have been found in New Mexico. The museum is open weekdays and is free to the public. The museum is available for self-guided school tours. Teachers may call ahead and request a brochure to

assist in tours. A free workbook is available for middle school teachers and students. It includes exercises that may be completed during a museum visit and follow-up exercises for later. Teachers may also call the museum for help with classroom questions.

Las Cruces Museum of Natural History

700 Telshor Boulevard
Mesilla Valley Mall
Las Cruces, New Mexico 88011
Phone (505) 522-3120
Fax (505) 522-3744

The Las Cruces Museum of Natural History provides exhibits and educational programs on a variety of natural history and science-related topics, with an emphasis on the Chihuahuan Desert. The museum's nature center is home to live animals and plants of the desert, hands-on science equipment, and natural history specimens. The museum offers classes, workshops, lectures, teacher training workshops on the environment, school tours, evening sky programs, nature field trips, and special programs, such as Project Wild and Project Learning Tree. Teachers can take advantage of the resource library for lesson ideas and to find information on identifying specimens. Museum staff can honor some special requests for visits to schools and can connect teachers with a network of scientific experts. The museum publishes a natural history and science newspaper written by young teenagers and a quarterly newsletter, The Cenozoic Times. Both are available upon request.

Maxwell Museum of Anthropology

University of New Mexico
Albuquerque, New Mexico 87131
Phone (505) 277-2924
Fax (505) 277-1549

Teachers and students can study archaeology through the education programs of the Maxwell Museum of Anthropology. Museum tours can focus on peoples of the Southwest and how evidence of their culture is analyzed to create a story. A tour of the human origins gallery delves into human anatomy and inferences about diet and cognitive development that are made from analyses of skeletons, muscles, and teeth. Speakers can present any of four "trunk programs" to schools. These trunks contain artifacts and provide activities on topics like archaeology, ancient tools, folk instruments, and ancestors. The last provides skull replicas from Australopithecus to modern humans and gorillas. Students use calipers to analyze and compare the differences. Teachers can also borrow trunks on the environment, people of the Mimbres, and pottery analysis. Workshops can preview the use of these materials.

Museum of New Mexico: Office of Archaeological Studies

P.O. Box 2087
Santa Fe, New Mexico 87504
Phone (505) 827-6343
Fax (505) 827-7308

The Office of Archaeological Studies contracts with the New Mexico Highway and Transportation Department to study prehistoric and historic sites within proposed highway construction projects. An outreach program, Roads to the Past: Highway Archaeology in New Mexico, presents archaeological findings to school and civic groups. Staff can present lectures or slide shows on a wide range of archaeological topics, demonstrate crafts, such as flint knapping and ceramic technology, and conduct field trips to selected sites. Teacher workshops on archaeological topics are also possible and can demonstrate how the multidisciplinary field can teach critical thinking skills, the scientific process, and multicultural perspectives.

Museum of Southwestern Biology

University of New Mexico
Biology Department
Albuquerque, New Mexico 87131
Phone (505) 277-5340
Fax (505) 277-0304
E-mail wgannon@unm.edu

The University of New Mexico's Museum of Southwestern Biology (MSB) includes research collections of birds, reptiles and amphibians, arthropods, plants, fishes, and mammals. If staff time permits, visiting groups may make advance requests for tours on topics of interest. Faculty and graduate student researchers work all over the world but particularly in the southwestern United States and South and Central America. As a research and education facility, the MSB is a primary source of information on southwestern organisms. Educators' information requests are honored if possible.

National Atomic Museum

P.O. Box 5800
Kirtland Air Force Base
Albuquerque, New Mexico 87185-1490
Phone (505) 284-3243
Fax (505) 284-3244

The National Atomic Museum, operated by Sandia National Laboratories, focuses on the history of atomic technology and development. The museum houses displays, including a chronicle of the Manhattan Project and its contributing scientists, and has nuclear-capable planes, missiles, and rockets on-site. The science of radiation is explained through exhibits, including an exhibit about the role of nuclear medicine. Special displays highlight the contributions of Hispanic, Native American, African-American, female, and other populations to the development of nuclear technology and other sciences. Outreach programs are available to schools; materials are

available for all grade levels to use both before and after museum visits. The museum has a home page at <http://www.sandia.gov/AtomMus/AtomMus.htm>.

Natural History Museum, Eastern New Mexico University

Station 33, Eastern New Mexico University
Portales, New Mexico 88130
Phone (505) 562-2723
Fax (505) 562-2192

Eastern New Mexico University is the only university in the state with a natural history museum. Teachers and students may visit the museum, located in Roosevelt Hall, where they will see exhibits of amphibians, reptiles, and the like. Hands-on activities are facilitated by the museum staff. Teachers may use the museum as a laboratory for their curriculum units.

New Mexico Museum of Natural History and Science

1801 Mountain Road, NW
Albuquerque, New Mexico 87104
Phone (505) 841-2800
Fax (505) 841-2866
E-mail chadwick@darwin.nmmnh-abq.mus.n

The New Mexico Museum of Natural History and Science is organized by the theme of "a walk through time." Exhibits are arranged chronologically, starting with the origin of the solar system and focusing specifically on what the Southwest was like in each time period. The museum offers workshops to help science teachers incorporate museum trips into their curriculum. It also develops booklets to accompany temporary exhibits designed to provide background knowledge for teachers. These are available for $1.00, which covers the production costs. An outreach program provides trained volunteers who go to classrooms to present programs that are customized for each teacher's needs. Examples of topics that may be presented in classrooms include fossils, dinosaurs, caves, bats, and earthquakes. The museum offers inservice sessions that focus on using the immediate environment to teach science. The museum has a home page at <http://www.aps.edu/htmlpages/nmmnh.html>.

Red Rock Museum

P.O. Box 328
Church Rock, New Mexico 87311
Phone (505) 863-1337
Fax none

Collections in the Red Rock Museum show the cultural history of the Four Corners region. Both prehistory and natural history themes are incorporated into permanent and temporary displays. Tours and programs can be geared to audiences from preschool through adult. The Red Rock Museum is in Red Rock State Park, which is a resource for field studies in geology and a variety of environmental topics. Museum staff can help teachers organize activities to use with children on-site.

Roswell Museum and Art Center

Robert Goddard Planetarium
11th and North Main
Roswell, New Mexico 88201
Phone (505) 624-6744
Fax (505) 624-6765
E-mail snbamara@arriba.nm.org

The Roswell Museum and Art Center and Robert Goddard Planetarium has a variety of art galleries and preserves Dr. Robert Goddard's laboratory. Programs describe the rocket pioneer's life and discoveries. The planetarium provides astronomy programs for area schools, as well as public programs and such special events as star parties, space camps, and laser light shows. Planetarium staff are involved in teacher training in astronomy through the university, the statewide systemic initiative, and local schools' staff development programs.

Santa Fe Children's Museum

1050 Old Pecos Trail
Santa Fe, New Mexico 87501
Phone (505) 989-8359
Fax (505) 989-7506

The Santa Fe Children's Museum offers a number of science-related programs. The Earthworks Program, an outdoor environmental classroom, offers garden-based biology and animal science programs in the greenhouse and at the one-acre garden. Hands-on environmental education programs introduce youngsters to garden-based science and the natural world through sensory adventures, experiments, games, stories, and group activities. Children learn about soils and historic northern New Mexico architecture in an adobe village project. An off-site homing pigeon program emphasizes the homing instinct, life cycles, anatomy, and the sport of pigeon racing. Participants write messages for the birds to take back to the museum, and take part in the pigeon release. Local scientists offer hands-on Sunday science workshops focusing on such activities as physics, space geometry, turtles and tortoises, water rockets, and simulated archaeological digs. The museum is open to school groups by appointment year-round.

Space Center

P.O. Box 533
Alamogordo, New Mexico 88311-0533
Phone (505) 437-2840
Fax (505) 434-2245

The Space Center is a complex that includes the Space Hall of Fame (museum), an outdoor Air and Space Park and Memorial Garden, the grave of the first U.S.

"astro-chimp," a planetarium, and an OmniMax theater. Visiting groups can follow self-guided tours or arrange for guided tours and programs. A packaged field trip can include the OmniMax movie, museum tour, a planetarium show, plus an educational program such as Science or Magic? or the NASA Survival Test. Teacher workshops include an overnight science camp with a star party, science fiction movies, and a planetarium program. Other teacher classes are Art as Science, Rocket Workshop, and StarLab training (the last allows educators to borrow a portable planetarium). Schools can select grade-specific outreach programs on many topics from model rockets to constellations; a community night for parents is also available. During the summer, children may attend a shuttle camp.

War Eagles Air Museum

Santa Teresa Airport
P.O. Box 1225
Santa Teresa, New Mexico 88008
Phone (505) 589-2000
Fax (505) 589-0814

The War Eagles Air Museum, located two miles from the El Paso airport, has 28 vintage World War II airplanes, 24 of them in flying condition. Also on-site is a resource library on World War II history and technical information associated with aircraft from that period. Students may borrow library books for special projects and interests. Planes on-site include the P51 Mustang, P40 Warhawk, P38 Lightning, A26, TBM, and MIG fighters from Russia. Programs cover science and history, and tour leaders are available for school groups of 30 or fewer students from fifth grade up.

Professional Organizations

New Mexico Society of Professional Engineers

1615 University, NE
Albuquerque, New Mexico 87102-1790
Phone (505) 247-9181
Fax (505) 247-9376

The New Mexico Society of Professional Engineers provides speakers who go to a teacher's classroom upon request. There is no charge for this service. Through the New Mexico Engineering Foundation, the society conducts and supports educational programs in engineering. MathCounts, a program for seventh and eighth graders, includes math skills coaching and competitions. Discover "E" is a career guidance program used in junior and senior high school math and science classrooms that includes activities showing practical engineering applications.

State Agencies

New Mexico Bureau of Mines and Mineral Resources

801 Leroy
Socorro, New Mexico 87801
Phone (505) 835-5420
Fax (505) 835-5430
E-mail nmbmmr@mailhost.nmt.edu

The Geologic Extension Service was established to provide citizen access to the resources and services of the New Mexico Bureau of Mines and Mineral Resources. Lite Geology is a quarterly publication ($4.00/year) that includes articles, photographs, cartoons, and a list of additional sources of information especially for teachers and kids. Numerous maps, bulletins, and reports are available. The staff can answer technical questions on the state's geology and mineral resources. A mineral museum, open weekdays, is on the campus of New Mexico Institute of Mining and Technology, and the bureau's home page offers a display of minerals, publication information, and other features. Earthquake Workshops for teachers are offered. The bureau's home page is at <http://geoinfo.nmt.edu>.

New Mexico Department of Game and Fish

141 East De Vargas
Santa Fe, New Mexico 87504
Phone (505) 827-7867
Fax (505) 827-7801

The New Mexico Department of Game and Fish, through its Conservation Education Section (CES), provides training, field experiences, and resources to teachers and classes. Most services and materials are free, but a few materials may involve a small fee. CES offers workshops for teachers, including Project WILD, Aquatic WILD, and Advanced WILD, which focus on a single species or group of species in order to provide specific knowledge, skills, and techniques that can be fitted to the classroom curriculum. CES has a wide variety of printed materials, posters, and videos available either free or on loan. The Schoolyard Habitat Program is a student-led action project that assists in the development, design, and implementation of schoolyard habitats to be used by wildlife and humans. In the Playa Lakes Joint Venture, CES cooperates with other state agencies, private businesses, and membership associations to increase student knowledge, appreciation, and informed decision making regarding wetlands. The department has a World Wide Web home page at <http://gmfsh.state.nm.us>.

New Mexico

New Mexico Department of Highways and Transportation

1120 Cerrillos Road
Santa Fe, New Mexico 87501
Phone (505) 827-5100
Fax (505) 827-3784

New Mexico Clean & Beautiful is a program of the New Mexico Department of Highways and Transportation and is the state affiliate with the national Keep America Beautiful program. Waste-in-Place (K-6), a hands-on curriculum about solid waste management that uses such activities as "garbage pizza" to teach about landfills, is provided through local and state Keep America Beautiful affiliates. Waste—A Hidden Resource is the curriculum program for grades 7-12. State and local programs also offer teacher training for these programs. Department staff members are often available for classroom presentations or to offer information by phone about topics from litter control to engineering and computer-aided drafting.

New Mexico Mining & Minerals Division

2040 South Pacheco Street
Santa Fe, New Mexico 87505
Phone (505) 827-5970
Fax (505) 827-7195

The New Mexico Mining & Minerals Division can provide mineral trail maps, with some hands-on mineral samples and slides upon request. The office can also provide speakers on earth science, biological science, and mining. The staff is locally involved in math and science tutoring.

New Mexico Office of Forestry

408 Galisteo
Santa Fe, New Mexico 87501
Phone (505) 827-5830
Fax (505) 827-8089

The New Mexico Office of Forestry sponsors Project Learning Tree workshops, which are held throughout the state, often in conjunction with conferences or Project WILD training. The free training sessions can be scheduled for 8 or 16 hours. Workshop participants receive the program manual and other free materials. Week-long environmental workshops are held in the summer for New Mexico teachers; Healthy Ecosystem is open to teachers statewide, while The Environment—A Workshop for Teachers is primarily for teachers in northern New Mexico. Teachers may request presentations by staff; the presentation on fire ecology is especially popular.

New Mexico Office of Parks and Recreation

2040 South Pacheco Street
Santa Fe, New Mexico 87501
Phone (505) 827-7173
Fax (505) 827-1376

The primary service of the New Mexico Office of Parks and Recreation involves water and boating safety. Officers work with teachers to provide a program suitable for the ages and interests of the students. The staff at the main office can also put teachers in touch with rangers at specific parks who can assist with developing and scheduling field trips, as well as providing information for ecosystem studies, interpretation of desert life, and other natural science topics.

State-Based Federal Programs

Ag in the Classroom New Mexico State Leader

New Mexico Farm and Livestock Bureau
421 North Water
Las Cruces, New Mexico 88001
Phone (505) 526-5521
Fax (505) 525-0858
E-mail NormPlank@bbs.fb.com

The Ag in the Classroom State Leader can provide a catalog of more than 200 lesson plans prepared by teachers. The lesson plans are available for printing and shipping costs. The lesson plans are inclusive units of work for grades K-12, with objectives, specific competencies, content outline, suggested activities, work and assignment sheets, answer keys, references, and resource materials and persons. A two-and-a-half-day seminar for teachers is held in June. Future Farmers of America, 4-H, and college students help the state leader provide petting zoos, hayrides, farm and ranch tours, and information on all aspects of agriculture during the school Ag Days.

Bureau of Land Management State Office

Education Programs
P.O. Box 27115
Santa Fe, New Mexico 87502-0115
Phone (505) 438-7400
Fax (505) 438-7426

The Bureau of Land Management, as part of the U.S. Department of the Interior, administers public land in Kansas, New Mexico, Oklahoma, and Texas, overseeing mineral resources, oil and gas leasing, and mining concerns. The agency publishes maps of New Mexico showing land ownership and has information on the state's many recreation areas. Educators may be interested in the Adopt-a-Horse program that this office disseminates. A wilderness curriculum for K-6 is available; a secondary curriculum is being developed.

Inhalation Toxicology Research Institute

Education Coordinator
P.O. Box 5890
Albuquerque, New Mexico 87185
Phone (505) 845-1257
Fax (505) 845-1198
E-mail mwood@lucy.tli.org

The Inhalation Toxicology Research Institute, part of the U.S. Department of Energy, investigates inhaled environmental pollutants and their health effects; subjects include asthma, smoking, and air pollution. The education staff conducts tours of research and equipment, sponsors teachers and students as summer research interns, and makes presentations at local schools. Presentations can be made on how particles enter the lungs, including a model lung demonstration, and on radiation. With the latter topic, teachers can borrow a kit that includes a Geiger counter. Teachers may request special programs.

Los Alamos National Laboratory

Science Education and Outreach Group
P.O. Box 1663, Mail Stop P278
Los Alamos, New Mexico 87545
Phone (505) 667-1919
Fax (505) 665-4093
E-mail sbd@lanl.gov

Los Alamos National Laboratory (LANL), a part of the U.S. Department of Energy, conducts more than 40 science and mathematics programs for students and teachers from elementary to postgraduate levels. Although some programs are regional or national, most draw students and teachers from communities in northern New Mexico. Programs for students are designed to increase student knowledge of, and interest in, mathematics and science, while those for teachers boost science process and content knowledge and enhance instructional skills and techniques. Programs range from one to three years and typically include follow-up components of three or four weeks in a residential summer institute or work during the school year. Interaction with LANL scientists and researchers is an integral part of all science education programs. The World Wide Web home page for LANL education programs is <http://education.lanl.gov>.

NASA/FAA Regional Teacher Resource Center

Cooperative Educational Services (CES)
4216 Balloon Park Road, NE
Albuquerque, New Mexico 87109
Phone (505) 344-5470
Fax (505) 344-9343

The Teacher Resource Center in Albuquerque has both NASA and FAA materials available, free to the public. Print materials are limited to one copy of any item for each teacher during the first visit, but a school district may copy material for wider dissemination. Resource materials, covering a wide range of topics about flight and aerospace, include lessons to be taught within a context (i.e., a lesson on the moon), entire stand-alone curricula with lessons, activities, etc., and supplemental pieces. Slide and tape programs and filmstrip and tape programs are available for loan (bring a viewer to the center to preview programs). Videotapes can be copied at the center (call for an appointment and bring a blank videotape). Workshops are provided through the University of New Mexico, and information on these workshops can be obtained through the Teacher Resource Center.

National Radio Astronomy Observatory

P.O. Box O
Socorro, New Mexico 87801
Phone (505) 835-7000
Fax (505) 835-7027
E-mail dfinley@nrao.edu

The National Radio Astronomy Observatory (NRAO), a facility of the National Science Foundation, has major sites in Virginia, Arizona, and New Mexico. The Socorro observatory manages two projects, the Very Long Baseline Array, with ten radio astronomy antennas from Hawaii to the Virgin Islands, and the Very Large Array (VLA), with 27 antennas 50 miles west of Socorro. Education staff often can conduct tours tailored to the needs of science groups of all ages. These tours must be arranged at least two weeks in advance and can include a program on radio waves and radio astronomy. The VLA Visitor Center is also open to the public for self-guided tours. Education staff can bring local schools information specific to science studies. Teachers can request a packet of information describing the NRAO mission and general astronomy information.

New Mexico

Natural Resources Conservation Service, New Mexico State Office

U.S. Department of Agriculture
6200 Jefferson NE, Suite 305
Albuquerque, New Mexico 87109
Phone (505) 761-4400
Fax (505) 761-4463

The Natural Resources Conservation Office has a teacher's packet that includes a variety of information on soil and water conservation. The packet includes the book Teaching Soil and Water Conservation, with activities for classroom use.

New Mexico 4-H

New Mexico State University
Box 30003, Dept. 3AE
Las Cruces, New Mexico 88003-8001
Phone (505) 646-3026
Fax (505) 646-3027

The 4-H Special Interest and School Enrichment Programs can be used as in-school supplemental material for students from kindergarten through high school. In From Egg to Chick, for example, students use an incubator in the classroom (grades 2-6). Many of the programs include videos as well as hands-on activities. Many have an energy theme; others concern environmental and personal health issues. Gee Whiz in Agriculture (grades 4-6), a program of six 30-minute videos, presents career opportunities in agriculture. A booklet describing the curriculum materials as well as a list of county extension offices is available from New Mexico 4-H. Specific programs are available through the county agents.

New Mexico Space Grant Consortium, NASA

New Mexico State University
Well Hall, Bay 4, Box 30001, Dept. SG
Las Cruces, New Mexico 88003-0001
Phone (505) 646-6414
Fax (505) 646-7791
E-mail jmcshannon@nmsu.edu

New Mexico Space Grant Consortium (NMSGC) is a NASA grant to enhance engineering, technology, mathematics, and science education from kindergarten to graduate school. NMSGC has a NASA/FAA Regional Teacher Resource Center that distributes videos, lessons, slides, and software to educators. In NMSGC's statewide Student Launch Project, students design, build, test, and launch rockets and payloads. High school teachers and students attend a one-week summer institute where they build and launch a high-powered model rocket with a multisensor payload.

Phillips Laboratory

Air Force Materiel Command,
Office of Public Affairs
3550 Aberdeen SE
Kirtland Air Force Base
Albuquerque, New Mexico 87117
Phone (505) 846-1911
Fax (505) 846-0423

Phillips Laboratory, operated by the U.S. Department of Defense, has three outreach programs for schools. Computer-assisted mathematics instruction brings learning tools based on artificial intelligence and other advanced technology into high schools statewide to enhance learning in mathematics, science, and English. Marsville is a classroom-based simulation developed by the Challenger Center for Space Science Education; student teams create prototypes of a colony on Mars. The program includes teacher training and is available in New Mexico elementary schools, which collaborate to communicate on colony operations. It culminates in the spring when a model colony is built at the laboratory. In the Space Experiment Program Albuquerque-area high school teams design and carry out a year-long experiment with laboratory mentors.

Sandia National Laboratories

Educational Outreach, MS 0965
P.O. Box 5800
Albuquerque, New Mexico 87185
Phone (505) 271-4122
Fax (505) 271-7846

Sandia Laboratories has emphasized educational outreach programs. Teacher Enhancement Programs offer teachers professional development experiences. The Science Advisors Program (SCIAD) is a multifaceted program that offers instructional materials on loan, inservice workshops and summer institutes, and science advisors to participating schools. The Educational Outreach Center provides resources for hands-on instruction, including more than 100 kits and videos on loan. Sandia collaborates with the Lawrence Hall of Science to present teacher institutes and to develop educational materials. Sandia also has student enrichment programs in which practicing scientists engage students in hands-on, inquiry-based science. Sandia hosts Science Bowl competitions and a Summer Research Internship Program for middle and high school students in mathematics, science, and vocational education. The materials provided to participants include computer-aided drafting (CAD) software, a laptop computer and training in its use, a video and teaching guide on superconductors, and a superconductor experiment.

Oklahoma

Sites on map are locations that can be visited. Other resources in the directory serve as sources for materials and information but are not available for on-site visits.

Ardmore
1. Tucker Tower Nature Center

Claremore
2. Conservation Education Reserve

Enid
3. Leonardo's Discovery Warehouse

Healdton
4. Healdton Oil Museum

Norman
5. Oklahoma Museum of Natural History

Oklahoma City
6. Aerospace Science and Technology Education Center
7. Kirkpatrick Planetarium
8. Omniplex Science Museum
9. Oklahoma Air and Space Museum
10. Oklahoma City Zoological Park
11. Oklahoma Dept. of Wildlife Conservation

Seminole
12. Jasmine Moran Children's Museum

Stillwater
13. NASA Aerospace Professional Development Center

Sulphur
14. Goddard Youth Camp
15. Travertine Nature Center

Tonkawa
16. A.D. Buck Museum of Natural History and Science

Tulsa
17. Harmon Science Center
18. Oxley Nature Center
19. Society of Exploration Geophysicists
20. Tulsa Zoological Park and Living Museum

Map prepared by Sharon Adams and Jane Thurmond

BEST COPY AVAILABLE

Oklahoma

Aquaria/Botanical Gardens/Zoos

Oklahoma City Zoological Park

2101 Northeast 50th Street
Oklahoma City, Oklahoma 73111
Phone (405) 424-3344, ext. 218
Fax (405) 425-0207

The Oklahoma City Zoological Park offers classes for K-12 school groups. The Aquaticus lab class introduces aquatic animals through hands-on activities featuring preserved specimens of a sea star, horseshoe crab, and moray eel, a dolphin skull, and whale teeth and baleen. The Amazing Animals class uses live animals, skins, skulls, and eggs to illustrate animal classification and adaptations. The same programs are used for outreach to schools in the vicinity. Teacher workshops are offered throughout the year. The zoo has created books, such as The Aquaticus Activities Book, The Great EscAPE Discovery Book, and The Island Life Workbook, that contain classroom activities. As much as possible, the zoo staff adapt classes for all ages and provide information resources to educators.

Tulsa Zoological Park and Living Museum

5701 East 36th Street N.
Tulsa, Oklahoma 74115
Phone (918) 669-6220
Fax (918) 669-6610

The Tulsa Zoological Park is a North American living museum, one of the first to bring a holistic approach to living animal displays. Displays involve four different areas showing topography, plants, animals, and human cultural interactions. The site also includes a recovered wetland. Adventures in Learning tours provide both standard and customized programs for school groups; live animal presentations are held at least twice a day. Touch Carts on-site have hands-on artifacts and biofacts to accompany displays. An outreach van, Wildlife on Wheels (WOW!), is available for grades one and up, with theme programs for each grade level. A special collaboration with fourth-grade classes offers environmental workshops for students and activity packets for their teachers.

Museums and Science Centers

A. D. Buck Museum of Natural History and Science

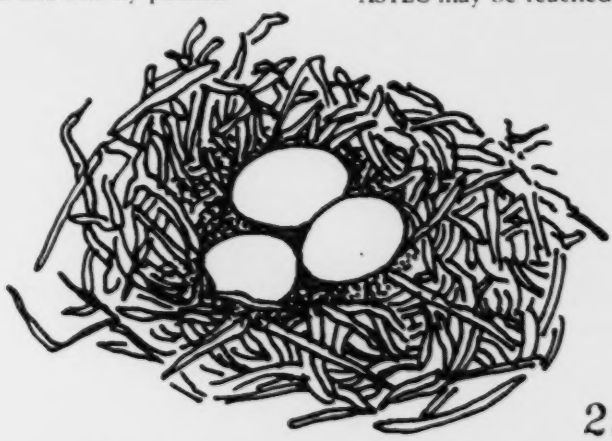
P.O. Box 310
Tonkawa, Oklahoma 74653
Phone (405) 628-6477
Fax (405) 628-6209

The A. D. Buck Museum of Natural History and Science has a major collection of 150 to 170 rock specimens and a fairly complete collection of mounted mammals and birds native to the Kay County area of Oklahoma, in addition to its history collection. School groups are welcome to visit on afternoons during the school year or by appointment. The curator will explain the exhibit and answer questions.

Aerospace Science and Technology Education Center

Oklahoma City University
2501 North Blackwelder
Oklahoma City, Oklahoma 73106
Phone (405) 521-5898
Fax (405) 521-5897

The Aerospace Science and Technology Education Center (ASTEC) of Oklahoma City University is located at Shepherd Mall. The center operates several programs for students, teachers, families, and civic and corporate groups. Aerospace by Design programs provide opportunities for scout merit badges, sleep-ins, and Science for Girls Only. Saturday programs use space shuttle, space station, and mission control simulators, and other programs focus on the design and construction of robots and model rockets. Custom-tailored programs may be requested. Outreach programs include Passport to the Future, with inflatable shuttles, and Time Machine, with a portable StarLab planetarium. Leadership development provides challenge courses as well as corporate training designed to improve teamwork, communication, and self-confidence. ASTEC is also a NASA Teacher Resource Center with videos and lesson plans for teachers, and it facilitates teacher workshops, camps, and seminars. ASTEC may be reached at (800) 633-7242.



Harmon Science Center

5707 East 41st Street
Tulsa, Oklahoma 74135
Phone (918) 622-5000
Fax (918) 622-5098

Harmon Science Center (HSC) is an interactive science center with hands-on exhibits ranging from a radio telescope to dinosaur fossils. A major installation is Underground Tulsa, a seven-layer exploration of subterranean Tulsa, through which participants walk, climb, and slide. HSC exhibits and demonstrations are correlated with Oklahoma's published academic skills and the curriculum timelines of Tulsa schools. Teachers booking field trips are encouraged to attend free previewing orientations focusing on integrating exhibits with their own curriculum needs. Teacher workshops offer continuing education units; most build skills in offering hands-on science and math activities. The center hosts regional science meetings, corporate events, and offers overnight lock-ins for schools and youth organizations, as well as badge classes for scouts. The center's World Wide Web home page is at <http://hsc.tulsa.k12.ok.us/>.

Healdton Oil Museum

315 East Main Street
Healdton, Oklahoma 73438
Phone (405) 229-0317
Fax none

The Healdton Oil Museum presents the history of oil exploration through cores of oil-producing formations, historic drilling equipment, displays of an oil field, and other historic objects and photographs. School groups are welcome during the regular hours on Friday, Saturday, and Sunday, or by arrangement. Visitors are often presented with a small sample of Oklahoma crude.

Jasmine Moran Children's Museum

P.O. Box 1828
1714 Highway 9 West
Seminole, Oklahoma 74868
Phone (405) 382-0950
Fax (405) 382-3707

A place where children explore careers through role-playing, the Jasmine Moran Children's Museum also offers special events that focus on science, including Saturday and summer programs on varied topics from kite making to slime. Science exhibits in the museum allow visitors to explore with mirrors, bubbles, and shadows, and a large aquarium has native fish and turtles. Teachers' packets to prepare children for a museum visit contain descriptions of exhibits and investigations into topics.

Kirkpatrick Planetarium

Kirkpatrick Center Museum Complex
2100 Northeast 52nd Street
Oklahoma City, Oklahoma 73111
Phone (405) 424-5545
Fax (405) 424-5106
E-mail wayne.wyrick@baremetl.com

Kirkpatrick Planetarium, located within the Omniplex Science Museum, provides an extensive menu of classes for visiting school groups and serves teachers, students, and the general public with information to satisfy research projects or curiosity. These classes range from basic concepts in the shape and place of the earth and how the moon changes in appearance, to planetary comparisons, multicultural perspectives on astronomy, and simulations of colonizing other planets. Through this variety of classes the planetarium serves preschool to senior high school students. Teacher workshops include general how-to sessions on teaching astronomy, the Jason Project, and I've Got Rhythm, a multidisciplinary approach to the theme of cycles and changes. That session features a sequence of experiences that include listening to an orchestra concert, exploring the museum art collection, and learning about planetary motions. A teacher handbook provides activities for before and after the program. The planetarium offers daily solar observatory viewings and a computer lab for groups to learn to network with computers for information resources.

Leonardo's Discovery Warehouse

200 East Maple
Enid, Oklahoma 73702
Phone (405) 233-ARTS
Fax (405) 237-7574

Leonardo's is an arts and science interactive discovery center in a remodeled warehouse near downtown Enid. Exhibits include a simulated archaeological dig, a dinosaur egg to touch, fossils, space shuttle simulator, and music and computer labs. Adventure Quest, an outdoor science park, is scheduled to open in late 1996; it will have a research quality telescope, weather instruments, model of a lock and dam system, and a series of interlocking mazes and tunnels. Visiting school groups enjoy a different science demonstration each week. Trained instructors can check out a StarLab planetarium.

Oklahoma

Oklahoma Air and Space Museum

Kirkpatrick Center Museum Complex
2100 Northeast 52nd Street
Oklahoma City, Oklahoma 73111
Phone (405) 424-0203
Fax (405) 424-0240

The Oklahoma Air and Space Museum, in a major museum complex near the city zoo, provides school groups with either one-hour classes on aviation, space, and the navy or additional programs on communication, history, physics, and technology. Classes include hands-on activities, working with the scientific method, and other problem-solving skills. Computer labs provide flight simulations, architectural programs for the design of moonbase structures, and flight training simulators. The museum offers week-long summer day camps for four- to sixteen-year-olds, Young Astronaut programs, and overnights in the museum in conjunction with annual Oklahoma City Air Shows. Teachers may take free NASA workshops.

Oklahoma Museum of Natural History

1335 Asp Avenue
Norman, Oklahoma 73019
Phone (405) 325-4712
Fax (405) 325-7699

The Oklahoma Museum of Natural History has anthropology, geology, and natural history collections. Visiting elementary school groups may chose from programs in archaeology, geology, animal adaptations, birds, and dinosaurs. The museum provides outreach exhibits to high school students including the World of the Red-tailed Hawk, Life in a Nutshell (about the Brazilian rainforest), and Puzzles, Paleontologists, and Prehistoric Life.

Omniplex Science Museum

Kirkpatrick Center Museum Complex
2100 Northeast 52nd Street
Oklahoma City, Oklahoma 73111
Phone (405) 424-5545
Fax (405) 424-5106

The Omniplex Science Museum, with more than 350 hands-on science exhibits, is located in Kirkpatrick Center with several other museums and a nearby city zoo. School groups can select from 150 grade-specific programs, from Kids and Critters, for the youngest children, to presentations on lasers for high school students. Middle school students can participate in the If I Had a Hammer program, in which they assemble a small house while in the museum. Preparatory lessons and activities are available to teachers taking advantage of this program. Earth Bus, a mini-museum in an old school bus, brings twelve ecology exhibits to grades four to twelve. Teachers may borrow six curriculum kits, including Inside and Outside the Earth and The Magic Machine: Human Anatomy. Teacher workshops are offered on such topics as global change and the Jason Project, and the Omniplex is a sponsor of National Science and Technology Week for Oklahoma teachers.

Nature and Environmental Centers

Conservation Education Reserve

Rogers University
Will Rogers and College Hill
Claremore, Oklahoma 74017
Phone (918) 341-4147
Fax (918) 343-2807

The Conservation Education Reserve is a 120-acre facility of undeveloped wilderness adjoining the University Center at Tulsa/Rogers University campus. It provides teachers and students with an opportunity to observe many different habitats and to participate in a variety of outdoor field experiences. The reserve includes the following: backyard habitat area (waterfall, composting demonstration area, butterfly garden), miles of hard- and soft-surfaced trails, a pond with dock, a wetlands boardwalk, two mini-environment ecosystem study labs, and a prairie reclamation site. The reserve hosts and sponsors teacher workshops in Projects WILD, WET, and Learning Tree. Individual teachers seeking ideas for their own outdoor classrooms and environmental education in general are encouraged to visit.

Goddard Youth Camp
Goddard Youth Foundation

Route 1, Box 276
Sulphur, Oklahoma 73086
Phone (405) 993-3333
Fax (405) 993-3334

Goddard Youth Camp is a nonprofit camp that provides overnight facilities to organizations, including school groups, to use the camp for environmental education. Organizations plan their own programs for implementation at the camp, which has been recognized as a National Environmental Education Landmark by the U.S. Department of the Interior. The camp has produced a teacher's guide to its environmental resources for use by those developing and delivering curriculum at Goddard. This publication includes stops on the four main trails with descriptions, activities and checklists of flora and fauna at the camp. Goddard Youth Camp offers teacher training workshops in outdoor education (three days, free) and also does consulting work for groups needing help in the development of outdoor education curricula.

Oxley Nature Center

5701 East 36th Street N.
Mohawk Park
Tulsa, Oklahoma 74115
Phone (918) 669-6644
Fax (918) 669-6653

Oxley Nature Center is located in an 800-acre sanctuary of woodlands, grasslands, lakes, ponds, and streams. Visiting school groups participate in a Discovery Tour or a special tour on a specific topic. Staff and volunteers conduct the tours for about one-and-a-half hours. Fourth and fifth graders can take part in a four-hour program called Riddle of the Woods. Teacher workshops are designed to improve skills in outdoor education and include Project WILD, as well as topics created by nature center staff. Outreach programs with age-specific classes in natural history, astronomy, and geology are available to schools. Nature center staff are also a resource for teachers who have questions about science.

Travertine Nature Center

Chickasaw National Recreation Area
P.O. Box 201
Sulphur, Oklahoma 73086
Phone (405) 622-3165
Fax (405) 622-6931

Located in the only National Park Service site in Oklahoma, the Travertine Nature Center has exhibits of local flora and fauna, including live specimens. An auditorium in the center is used for nature programs and videos on a variety of topics. The interpretive rangers give programs on nature, history, and ecology. School groups are welcome to visit the nature center and go on the walking tours. One tour is a one-and-a-half-mile walk to freshwater springs, where an interpretive talk on the history and geology of the area is given; another tour is the historic springs tour, a one-mile walk to the four sulphur springs, where a talk about the history of the springs is given. A teachers' packet is expected to be available in 1997. World Wide Web home page can be accessed at <http://www.nps.gov/chic>.

Tucker Tower Nature Center

3310 South Lake Murray Drive
Ardmore, Oklahoma 73401
Phone (405) 223-2109
Fax (405) 223-4052

Located in Lake Murray State Park, the Tucker Tower Nature Center contains exhibits on the natural history of Oklahoma and north Texas. Teacher packets with guides and posters are available on request. School programs offered on site include such activities as nature walks, nature games, and nature scavenger hunts. Groups are limited to 30 students. Programs on a variety of natural history and environmental topics can be customized to individual teacher interests.

Professional Organizations

American Association of Petroleum Geologists

P.O. Box 979
Tulsa, Oklahoma 74101-0979
Phone (918) 584-2555
Fax (918) 560-2678

The American Association of Petroleum Geologists (AAPG) publishes many books and maps, which are listed in a free catalog. Popular among teachers are the Geological Highway Maps, which show outcrops and places of interest such as fossil or mineral locations. At each annual convention (Dallas, April 6-9, 1997, and Salt Lake City, April 1998), the Youth Activities Committee sponsors a teacher day, which features workshops on geology education and technology, exhibits, and field trips to local geologic sites. AAPG is also the underwriter of a one-day teachers' workshop, Rocks in Your Head, a classroom-ready, hands-on earth science curriculum for grades 3-12, that is held in conjunction with the national and sectional meetings. Participants in the workshop receive rock and mineral samples as well as the teacher's manual of reproducible activities (cost to teachers is $10). AAPG gives an annual award for Excellence in the Teaching of Natural Resources in the Earth Sciences to a K-12 teacher (cash award). AAPG has a home page at <http://www.geobyte.com>.

Oklahoma

Oklahoma Society of Professional Engineers

Oklahoma Engineering Foundation
201 Northeast 7th Street, Room 125
Oklahoma City, Oklahoma 73105-2789
Phone (405) 528-1435
Fax (405) 557-1820
E-mail okspe@aol.com

Volunteer members of the Oklahoma Society of Professional Engineers (OSPE), working through the Oklahoma Engineering Foundation, make activities available to secondary school teachers and students across the state. Seventh through twelfth graders can attend an annual engineering fair during National Engineers Week and participate in student contests to design the best bridges, vehicles powered by rubber bands, structures, and Ping-Pong ball launchers (cash prizes awarded). Wacky WonderWorks is a contest to develop the most complex process for accomplishing a simple task. MathCounts is a seventh- and eighth-grade mathematics coaching and problem-solving program that culminates in regional, state, and national competitions. A free kit is provided to teachers interested in organizing a team. A scholarship program supports ten pre-engineering students each year, and a guidance program, including career awareness activities, is coordinated through seven OSPE chapters across the state. The society also advises teachers on Junior Engineering Technical Society (JETS), Tests for Engineering Aptitude Math and Science (TEAMS), and National Engineering Aptitude Search.

Society of Exploration Geophysicists

P.O. Box 702740
Tulsa, Oklahoma 74170-2740
Phone (918) 497-5500
Fax (918) 497-5558

A brochure called Careers in Geophysics is published by the Society of Exploration Geophysicists (SEG). The first 15 copies are free, and a fee is charged for additional copies. A large poster is also available. The SEG Foundation awards annual scholarships to college students who are pursuing a career in exploration geophysics or one of the related earth sciences. The deadline for completed applications is March 1, and applications are available from the SEG Business Office. The SEG Foundation Museum can assist teachers with selection of audiovisual materials. Videos are listed in a pamphlet and are loaned for the cost of shipping. The museum has displays of early instruments and equipment associated with geophysical exploration.

State Agencies

Oklahoma Archaeological Survey

University of Oklahoma
111 East Chesapeake, Building 134
Norman, Oklahoma 73019-0575
Phone (405) 325-7211
Fax (405) 325-7604

The Oklahoma Archaeological Survey helps sponsor the Diaries in the Dirt Program along with the Oklahoma Museum of Natural History. Diaries in the Dirt includes two board games on archaeological topics, Excite (a 3-D archaeological puzzle with real-time artifacts) and a set of artifacts for sand box explorations. The Diaries in the Dirt materials are available for loan to Oklahoma teachers and are geared primarily for grades four through six. The survey offers a school program, Oklahoma's First General Store, with multidisciplinary approach to archaeology. Although designed for grades four through seven, it may appeal to a wider audience. A set of three handouts that provide short-term exercises in archaeology is free to teachers. Handout titles include Buttonholing Archaeology, Knockable Rocks, and Compost Archaeology. The survey also loans slide-tape and video programs to teachers.

Oklahoma Conservation Commission

2800 North Lincoln Boulevard, Suite 160
Oklahoma City, Oklahoma 73105
Phone (405) 521-2384
Fax (405) 521-6686

The Oklahoma Conservation Commission publishes The Oklahoma Natural Resources Information Directory with addresses of federal, state, and local government agencies, universities and colleges, and museums, nature centers, and zoos that provide technical assistance or educational materials to educators. The commission coordinates environmental and conservation education statewide and cosponsors teacher workshops in Projects WILD, WET, and Learning Tree. Video and slide programs on soil and water conservation can be rented. The groundwater flow model, which comes with a manual of background information, can be used to teach basic principles of groundwater movement and contamination. Trunks of hands-on materials have videos, cassettes, posters, activity books, and a variety of materials and are used by staff when they visit classrooms or can be borrowed by teachers. Topics are wetlands, trees, recycling, and wildlife. Resources are available from the state office and from local conservation districts, many of which have an education specialist. Local districts also aid schools in establishing outdoor classrooms, including butterfly gardens. World Wide Web home page can be found at <http://www.state.ok.us/~conscom>.

Oklahoma Department of Agriculture, Forestry Services

2800 North Lincoln Boulevard
Oklahoma City, Oklahoma 73105-4298
Phone (405) 521-3864
Fax (405) 522-4583

The Oklahoma Department of Agriculture, Forestry Services staff can answer questions about trees, tree planting and care, and fire prevention and can serve as consultants for schools interested in developing an outdoor classroom. They also go to schools to do presentations, slide shows, experiments, and activities from Project Learning Tree, often as part of natural resource days at the schools. The department conducts Project Learning Tree workshops for teachers. Schools can apply for grants to incorporate forestry innovatively into the curriculum or to begin a tree education program for the community. Grants can also be awarded for Arbor Week celebrations. Resources available for loan or purchase include videos, such publications as Forest Trees of Oklahoma ($4.00), and tree "trunks," which include posters, videos, tree identification guides, and materials for activities. Additionally, their mascots, Smokey Bear and Woodsy Owl, can visit school classrooms. The department home page is at <http://www.oklaosf.state.ok.us/~okag/aghome.html>.

Oklahoma Department of Environmental Quality

1000 Northeast 10th Street
Oklahoma City, Oklahoma 73117
Phone (405) 271-7353
Fax (405) 271-8425

The Oklahoma Department of Environmental Quality produces A-Way with Waste, a K-12 curriculum supplement on solid-waste management. The activities are interdisciplinary and action oriented and involve students in problem-solving and decision-making tasks. The curriculum is free after teachers take a four-hour workshop. Project WET, sponsored by the department, the Oklahoma Conservation Commission, and the Water Resources Board, is an interdisciplinary water education program that stresses water resource use and conservation. Teachers take a six-hour training workshop, then receive activity guides and modules. The department participates in resource days at schools, can provide speakers on request, and has numerous brochures, posters, coloring books, videos, and other resources on recycling, solid waste management, air pollution, and similar topics. The Environmental Quality Education Committee, which includes members of the department and other organizations, produces a teacher resource guide that lists sources of environmental education information within the state.

Oklahoma Department of Wildlife Conservation

1801 North Lincoln Boulevard
Oklahoma City, Oklahoma 73105
Phone (405) 521-4636
Fax (405) 521-6898

The Department of Wildlife Conservation co-sponsors (with the Oklahoma Conservation Commission) Project WILD, providing training workshops for teachers. The department is also a training site for the Leopold Education Project, a high school curriculum based on Aldo Leopold's *Sand County Almanac*. A curriculum guide on Oklahoma wildlife is available, and teacher packets, curriculum guides, and posters are available for the following topics: wildlife management, aquatics, bluebirds, winter birds, and playa lakes. Resource trunks focusing on endangered species, outdoor classrooms, and water are available for loan (shipping fee charged), as are numerous videos. The department produces many educational posters on Oklahoma wildlife. Staff can help teachers set up outdoor classrooms and may be able to do a site visit. The department also sponsors hunter and aquatic education for students. School groups visiting Oklahoma City can visit the department offices and view its dioramas of Oklahoma ecosystems on display.

Oklahoma Geological Survey

Sarkey Energy Center
100 East Boyd Street, Room N-131
Norman, Oklahoma 73019-0628
Phone (405) 325-3031
Fax (405) 325-7069

The Oklahoma Geological Survey (OGS) responds to requests for information about geology and natural resources. OGS publishes bulletins, reports, and maps, some of which are of interest to K-12 teachers and students. For example, guidebooks to several state parks and other areas of geological interest are available. Free literature includes Oklahoma Earthquakes, Geology of Oklahoma—A Summary, and Geology and Mineral Resources of Oklahoma. A free catalog of OGS publications is available. The recently published Guide to Resources for Earth Science Information in Oklahoma is a book of lists specifically for educators and others interested in geology. It includes places and people that are resources for geological information: museums, state parks, quarries and mines, rock and mineral shops, government agencies, colleges and universities, oil and gas companies, professional geological organizations, and clubs, as well as lists of courses, books, and educational materials. The OGS home page is at <http://www.uoknor.edu./special/ogs-pttc/>.

Oklahoma

State-Based Federal Programs

NASA Aerospace Professional Development Center

Oklahoma State University
Suite 308-A, CITD
Stillwater, Oklahoma 74078-8089

Phone (405) 744-6784
Fax (405) 744-6785
E-mail ulri7800@spacelink.msfc.nasa.gov

The NASA Aerospace Professional Development Center in Stillwater is a NASA Teacher Resource Center and has lesson plans, videotapes, audiotapes, and slides available for Oklahoma teachers to copy for their classrooms. Bring a blank videotape to copy NASA videos. The center also has K-12 aviation education materials developed by the FAA. Appointments are preferred.

National Institute for Petroleum and Energy Research

Bartlesville Project Office, U.S. Department of Energy
P.O. Box 2563
Bartlesville, Oklahoma 74005

Phone (918) 337-4508
Fax (918) 337-4365

The Bartlesville Project Office sponsors teacher training in the Denver Earth Science Project curricula, Oil and Gas Exploration (7-12) and Ground Water Studies (7-9). Teachers attending the free workshops receive a complete kit of teaching materials. Other workshops may be offered in the future. The Bartlesville Project Office is currently developing and collecting resources for teaching concepts in oil and gas.

Oklahoma 4-H Program

Oklahoma State University
Room 205, Poultry Building
Stillwater, Oklahoma 74078-0330

Phone (405) 744-5390
Fax (405) 744-6522
E-mail ccox@okway.okstate.edu

The Oklahoma 4-H Program has several school enrichment programs. The Ag in the Classroom program is jointly sponsored with the Oklahoma departments of agriculture and education. This program uses agricultural concepts to teach basic skills in core academic subjects, generally through hands-on activities. The K-2 curriculum (two volumes, 107 lessons, $15) and the 3-4 curriculum (65 lessons, $10) are complete, and the 5-6 curriculum is nearly complete. The lessons provide a diverse look at the world of food and fiber. A program on water quality, Oklahoma Aqua Times, and an environmental education program, Caring for Planet Earth, are science-based programs. Most of the materials are free to Oklahoma teachers through the county extension offices or may be purchased by others from the central office. A 4-H home page link is available through the OSU home page <http://www.okstate.edu>.

Oklahoma Space Grant Consortium, NASA

University of Oklahoma College of Geosciences
100 East Boyd Avenue, Suite 1210
Norman, Oklahoma 73019-0628

Phone (405) 325-1240
Fax (405) 325-2550

Through a partnership between NASA and four universities, the Oklahoma Space Grant Consortium promotes activities in science, math, technology and other aerospace-related studies throughout the state's educational system. The four universities involved are Oklahoma State University, the University of Oklahoma, Cameron University, and Langston University. Teacher workshops, such as Star Base, cover aerospace topics; participants receive a variety of NASA and FAA publications. Staff can connect teachers with people throughout the state to answer questions and help with curricula.

Oklahoma

University Affiliates

Department of Aviation

University of Oklahoma
1700 Lexington
Norman, Oklahoma 73069
Phone (405) 325-7231
Fax (405) 325-7339

The Department of Aviation has instructors and staff members who speak on aviation to classes and school groups statewide. Staff will also consult with teachers. The department collaborates with such groups as the NASA Space Grant Consortium, the Aerospace Science and Technology Education Center, and the Oklahoma Aerospace Academy to sponsor summer workshops for teachers and students; these include ground school and flight experience.

Texas

Sites on map are locations that can be visited. Other resources in the directory serve as sources for materials and information but are not available for on-site visits.

San Antonio
59. Brooks Air Force Base
60. Lone Star Brewery and Buckhorn Hall of Horns
61. San Antonio Botanical Gardens
62. San Antonio Zoo
63. Sea World of Texas
64. Witte Museum

San Marcos
65. Aquarena Springs
66. Edwards Aquifer Research and Data Center

Sinton
67. Rob and Bessie Welder Wildlife Foundation

Tyler
68. Caldwell Zoo

Victoria
69. Texas Zoo

Waco
70. Cameron Park Zoo

Wichita Falls
71. Wichita Falls Museum and Art Center

Maps prepared by Sharon Adams and Lisa Thurmond

Texas

Abilene
1. Abilene Zoological Gardens

Alpine
2. Chihuahuan Desert Research Institute

Amarillo
3. Don Harrington Discover Center
4. Pantex Plant

Austin
5. Austin Children's Museum
6. Austin Nature and Science Center
7. National Wildflower Research Center
8. Texas Memorial Museum
9. Texas Space Grant Consortium, NASA
10. Zilker Botanical Gardens

Beaumont
11. Texas Energy Museum

Boerne
12. Cibolo Wilderness Trail and Nature Center

Brownsville
13. Gladys Porter Zoo

College Station/Bryan
14. Brazos Valley Museum of Natural History

Corpus Christi
15. Corpus Christi Botanical Garden
16. Corpus Christi Museum of Science and History
17. Texas State Aquarium

Dallas
18. Dallas Arboretum
19. Dallas Museum of Natural History
20. Dallas Zoo and Dallas Aquarium at Fair Park
21. Frontiers of Flight Museum
22. The Science Place

El Campo
23. El Campo Museum of Art, History & Natural Science

El Paso
24. Centennial Museum at UTEP
25. El Paso Zoo
26. Insights–El Paso Science Center

Fort Davis
27. McDonald Observatory Visitor Center

Fort Worth
28. Cattleman's Museum
29. Fort Worth Botanic Garden
30. Fort Worth Museum of Science and History
31. Fort Worth Zoological Park

Fritch
32. Lake Meredith Aquatic and Wildlife Museum

Galveston
33. Moody Gardens

Glen Rose
34. Fossil Rim Wildlife Center

Houston
35. Armand Bayou Nature Center
36. Children's Museum of Houston
37. Houston Museum of Natural Science
38. Houston Zoological Gardens
39. Museum of Health and Medical Science
40. NASA Teacher Research Center
41. Space Center Houston

Lake Jackson
42. Brazosport Museum of Natural Science

Laredo
43. Laredo Children's Museum

Lubbock
44. Museum of Texas Tech University
45. Science Spectrum Museum

Lufkin
46. Ellen Trout Zoo
47. Texas Forestry Museum

McAllen
48. McAllen International Museum

McKinney
49. Bolin Oil Company and Wildlife Exhibit
50. Heard Natural Science Museum & Wildlife Sanctuary

Midland
51. Petroleum Museum

Mountain Home
52. Y.O. Ranch Outdoor Awareness Program

New Braunfels
53. Children's Museum in New Braunfels

Palacios
54. Texas State Marine Education Center

Plainview
55. Museum of the Llano Estacado

Port Aransas
56. University of Texas Marine Science Institute

Port Arthur
57. Museum of the Gulf Coast

Rio Hondo
58. Texas Air Museum

Texas

Aquaria/Botanical Gardens/Zoos

Abilene Zoological Gardens

Box 60
East Highway 36 at Loop 322
Abilene, Texas 79604
Phone (915) 676-6085
Fax (915) 676-6084

The Abilene Zoological Gardens provides summer camps and zoo schools with classes related to zoology. The general focus of the exhibits is animals of the southwestern United States and Central America. These animals are contrasted with species in Africa and Madagascar. The zoo offers teachers inservice training in environmental education and access to the zoo library and information-finding services. The zoo also offers programs to enhance life science studies, especially at the fourth-grade level, and provides guided tours of the facilities. Outreach programs bring animals and artifacts to schools in the area. Teachers can be trained to use a kit called Suitcase for Survival and made up of confiscated materials from endangered species.

Caldwell Zoo

P.O. Box 428
Martin Luther King, Jr., Boulevard at
Gentry Parkway
Tyler, Texas 75712
Phone (903) 593-0121
Fax (903) 592-0351

Teachers who bring their classes to the Caldwell Zoo can select from several 30-minute program offerings to enhance their zoo tour (preregistration is required). These programs, adaptable to any grade level, include live animals and artifacts to touch. Behind-the-scenes tours and extended programs with guided tours are sometimes available. Upon request, the zoo occasionally provides facilities for science teacher workshops.

Cameron Park Zoo

1701 North 4th Street
Waco, Texas 76707
Phone (817) 750-8451
Fax (817) 750-8430

The Cameron Park Zoo is a natural habitat zoo that offers visiting school groups classes and focused tours upon request. The Zoomobile brings animals to school groups that cannot come to the zoo. The zoo staff also provides information and resources to students doing research, if they make written requests. Zoo Adventure Camp and other holiday activities and special events are held during the summer and school vacations.

Corpus Christi Botanical Gardens

8510 South Staples Street
Corpus Christi, Texas 78413
Phone (512) 852-2100
Fax (512) 852-7875

The relatively new Corpus Christi Botanical Gardens offers schools docent tours for clubs and K-12 school classes. The 180-acre site has extensive native vegetation, wetland areas, and shaded and open nature trails. It is a recognized birding facility with a tower. Other facilities show 2,000 orchids and bromeliads and other tropical, arid, and semi-arid collections. The docent-guided tours stress plant identification and the many ways in which plants affect humans. A working children's vegetable garden is also on-site.

Dallas Arboretum

8617 Garland Road
Dallas, Texas 75218
Phone (214) 327-8263
Fax (214) 324-9801
E-mail mbuntin@utdallas.edu

The Dallas Arboretum offers outreach to elementary schools and provides programs on its 66-acre site. The arboretum has 16 outreach programs focusing on plants, and teachers are invited to attend workshops that help them incorporate plants into their classrooms. Annually, the arboretum holds an Earth Day event. To schedule a trip, call (214) 821-7223.

Dallas Zoo and Dallas Aquarium at Fair Park

621 East Clarendon Drive
Dallas, Texas 75203
Phone (214) 670-5656
Fax (214) 670-7521

The Dallas Zoo administers the Dallas Aquarium at Fair Park. The direct phone number to the aquarium is (214) 670-8453, and a reservations service for both sites can be reached at (214) 670-6832. The aquarium features daily shark and piranha feedings and has a separate education center with a touch pool. The zoo features more than 350 species of animals and a monorail that travels through six of the seven habitats found on the African continent. Both sites host group field trips and offer on-site education programs. Outreach educational programs featuring live zoo or aquarium animals may be scheduled at your facility. Teachers may contact the education office at (214) 670-6832 for additional program or field trip information. The zoo and aquarium periodically present teacher workshops on a variety of environmental education topics. Teachers may get on the workshop mailing list by calling (214) 670-7541.

El Paso Zoo

4001 East Paisano
El Paso, Texas 79905
Phone (915) 521-1850
Fax (915) 521-1857

The El Paso Zoo is an 18-acre facility exhibiting species from the Americas and Asia. Materials are available for self-guided tours. Programs for visiting school groups cover such topics as venomous animals and local wildlife, and they involve live animals. A traveling safari brings programs to schools as well. Program curricula are interdisciplinary. Activities for use before and after visits to the zoo include many science skills and hands-on experiences. Materials were developed in collaboration with bilingual education students at the University of Texas at El Paso.

Ellen Trout Zoo

402 Zoo Circle
Lufkin, Texas 75904
Phone (409) 633-0399
Fax (409) 633-0311

The Ellen Trout Zoo offers three different guided tours: a general tour that covers animal identification, zoo geography, and natural history; an endangered species tour that covers conservation efforts and zoo-breeding programs; and an animal adaptation tour that focuses on animal feeding and defense behaviors. Staff provide secondary school programs on such topics as captive animal management, and they also give behind-the-scenes tours. Teachers and students can borrow videotapes, curriculum, research papers, and veterinary journals from the research library. The Wildlife on Wheels program goes to elementary schools with a different program for each grade level. The zoo also offers teacher workshops and an annual summer program.

Fort Worth Botanic Garden

3220 Botanic Garden Boulevard
Fort Worth, Texas 76107
Phone (817) 871-7686
Fax (817) 871-7638

The Fort Worth Botanic Garden occupies 109 acres and has 30 different garden areas, including a tropical conservatory and a five-acre woodland on the Trinity River bottomlands. Tour programs focus on plant adaptation, either in the tropical environment or in the natural woodland. Fourth-grade student groups from selected schools participate in a vegetable garden program that incorporates science and math into basic gardening skills. Staff can assist teachers with specific questions and recommendations on plants.

Fort Worth Zoological Park

1989 Colonial Parkway
Fort Worth, Texas 76110
Phone (817) 871-7055
Fax (817) 871-7400

The Fort Worth Zoological Park enhances school group visits to the zoo with grade-specific programs for K-12. Outreach programs bring these and other presentations to schools. Open houses are held to help teachers get ideas for using the zoo in their curriculum, and a discovery packet can be purchased to engage children in creative activities before and after zoo visits.

Gladys Porter Zoo

500 Ringgold Street
Brownsville, Texas 78520
Phone (210) 548-9453
Fax (210) 541-4940
E-mail educ@gpz.hilline.net

The Gladys Porter Zoo hosts field trips and provides programs and science classes on-site. Teacher packets have activity ideas for use before and after a class visit to the zoo, and teacher workshops include Project WILD. For zoo reservations, call (210) 546-7187.

Houston Zoological Gardens

1513 North MacGregor
Houston, Texas 77030
Phone (713) 525-3362
Fax (713) 525-3336

The Houston Zoological Gardens provides many on-site programs, from Animal Adventure classes to self-guided discovery box tours. Outreach programs include teacher inservice, an open house for educators, materials for use before and after the zoo visit, and Zoomobile programs for grades K-12. Programs are adaptable to classroom curriculum.

Lake Meredith Aquatic and Wildlife Museum

P.O. Box 758
104 North Robey
Fritch, Texas 79036
Phone (806) 857-2458
Fax (806) 857-3229

The Lake Meredith Aquatic and Wildlife Museum displays five large aquaria containing fish from the lake and six dioramas showing wildlife of the area. Docents are available to lead school groups in museum visits, and programs on topics requested by teachers are available on-site or at schools.

Texas

Moody Gardens

One Hope Boulevard
Galveston, Texas 77554
Phone (800) 582-4673
Fax (409) 740-7967

Moody Gardens is a public, nonprofit botanical garden using animals and nature in healing, rehabilitation, education, research, and recreation. Moody Gardens' Rainforest Pyramid is a tropical classroom with more than 2,000 varieties of plants, butterflies, fish, birds, and insects indigenous to the world's rainforests. With the Extended Instruction Student Experience (EISE), classes visit the pyramid, the Learning Place for a hands-on animal presentation, and the 3D IMAX Theater. The EISE program also includes a 104-page rainforest curriculum and two classroom activities. Teachers can also create their own tour package for their classes by choosing a combination of visits to the Rainforest Pyramid, Palm Beach, IMAX, or the Colonel Paddlewheeler's tour of Offatt's Bayou. Moody Gardens programs cover topics appropriate for students from kindergarten through high school. A staff member gives an interactive presentation, during which students can examine rainforest artifacts and meet live rainforest creatures. Fully accredited curricula on other topics and teacher workshops are also available.

National Wildflower Research Center

4801 LaCrosse
Austin, Texas 78739
Phone (512) 292-4100
Fax (512) 292-4627

The National Wildflower Research Center is a botanical garden dedicated to the preservation and reestablishment of native plants in North American landscapes. The 42-acre site has an exhibit gallery, Children's Little House, a nature trail, and 23 theme gardens. Publications of interest to educators cover starting a wildlife garden, wildflower meadow, butterfly garden, and many other topics. Staff can provide lists of recommended species of native plants, sources for buying seeds, and a bibliography for further information. Field trips to the site can be part of an extensive new curriculum, Exploring the Native Plant World. The curriculum includes teacher-training workshops and hands-on science kits for the classroom.

San Antonio Botanical Gardens

555 Funston Place
San Antonio, Texas 78209
Phone (210) 821-5143
Fax (210) 820-3528

The San Antonio Botanical Gardens constitute an outdoor laboratory for studying plants and their habitats. The 15-acre grounds provide three native plant communities and homes made of local materials: the East Texas Piney Woods with a lake and log cabin, the South Texas scrub country with an adobe house, and the Texas Hill Country with a stone house. A conservatory contains several glass houses with palms, a tropical rainforest, a desert, and ferns. Changing displays focus on special topics, such as epiphytes. Members of the staff occasionally speak at schools on topics like xeriscaping and gardening for wildlife. Classes available for Bexar County schoolchildren involve making terraria and studying plants of the world. Additional children's activities include Saturday nature classes and an organic gardening program and summer nature camp.

San Antonio Zoo

3903 North St. Marys Street
San Antonio, Texas 78212
Phone (210) 734-7184
Fax (210) 734-7291

The San Antonio Zoo provides guided tours and education center programs on request for third graders and older. These should be scheduled in advance. Teachers can check out the Suitcase for Survival or Endangered Species kits for classroom use.

Sea World of Texas

10500 Sea World Drive
San Antonio, Texas 78251
Phone (210) 523-3606
Fax (210) 523-3299

Sea World offers guided and self-guided tours, including a behind-the-scenes tour for school groups. Sleepovers are also available. Grade-specific teacher workshops are held during the summer on such topics as endangered species and whales and sharks. Sea World has a list of educational materials that includes information booklets on specific animals, teaching posters, animal slides, and curriculum guides on such topics as endangered species, coral reefs, and ecology.

Texas State Aquarium

P.O. Box 331307
2710 North Shoreline
Corpus Christi, Texas 78463
Phone (512) 881-1200
Fax (512) 881-1257

The Texas State Aquarium houses an extensive collection of live fishes, invertebrates, and birds. The education program has several options for visiting school groups, including a lab facility that demonstrates the physics of buoyancy and fluids while students learn scuba diving or canoeing in a 40,000-gallon pool. Students can also design model boats and predict performance or participate in fishing, tagging, and releasing activities. A laboratory experience for sixth and seventh graders includes analysis and classification of phyla from samples collected from Corpus Christi Bay. A packet is available with background information and activities for all grade levels to use before, during, and after a visit to the aquarium. At least 15 teacher workshops are held at the aquarium each year, and school outreach activities include a museum theater and slide lectures. The Ocean in Motion is a trailer that presents science programs for third and fourth graders in their communities.

Texas Zoo

P.O. Box 69
110 Memorial
Victoria, Texas 77901
Phone (512) 573-2891
Fax (512) 576-1094

The Texas Zoo features native Texas animals and plants and hosts on-site and outreach classes on such topics as sea turtles, animal differences, bats, and careers in zoology. Classes include live animals, interactive learning games, and biofacts to touch. Classes are available for preschool through adult groups. Teacher inservice workshops include an overnight at the zoo.

Zilker Botanical Gardens

Austin Area Garden Council
2220 Barton Springs Road
Austin, Texas 78746
Phone (512) 477-8672
Fax (512) 477-7341

The Zilker Botanical Gardens include oriental, rose, xeriscape, herb, and cactus gardens, the butterfly trail, and dinosaur tracks. School tours are directed toward third and fourth graders, although other groups will be accommodated if space is available. These tours are scheduled from 10 a.m. to noon or noon to 2 p.m. on weekdays and include an interactive slide show and a guided walk through the garden with trained docents. This program is free. The garden council helps local schools develop butterfly gardens on their campuses. Teachers who attend one of the butterfly gardening workshops can receive free plants to establish a school butterfly garden. Other workshops sponsored by the council include such topics as solar cooking and integrating nature crafts with the academic curriculum. The cost for these workshops ($7.50) goes toward handouts and materials. Dinosaur track information, a map of the gardens, and program information are available at the garden center. For tour scheduling, contact Molly Hill (442-4706); for information on teacher training, contact Dr. Molly Ogorzaly (477-8672).

Educational Organizations

Bat Conservation International

P.O. Box 162603
Austin, Texas 78716-2603
Phone (512) 327-9721
Fax (512) 327-9724

Bat Conservation International (BCI) has a free catalog for educators. The catalog features a wide variety of materials and gifts, including educational videos and slide sets (for specific age groups), posters, books, an echo-location audiotape, bat models, and ready-made bat-houses as well as plans for bat-houses. Reference resources and reading lists for educators and students are available upon request. BCI membership includes four issues a year of BATS magazine, discounts on merchandise, and invitations to join ecotours and workshops. Call (800) 538-BATS for a catalog. Bats are online at <http://www.batcon.org>.

Chihuahuan Desert Research Institute

P.O. Box 1334
Alpine, Texas 79831
Phone (915) 837-8370
Fax (915) 837-8192
E-mail dmiller@sul-ross-1.sulross.edu

The Chihuahuan Desert Research Institute can provide copies of research articles related to the Chihuahuan Desert. The Desert Trilogy, a set of three videotapes, is for sale for use with grades two and up. These videos give an overview of the entire region.

Texas

Colorado RiverWatch Foundation

1501 West 5th Street, Suite 110
Austin, Texas 78703
Phone (512) 326-5908
Fax none
E-mail CRWF@aol.com

The Colorado RiverWatch Foundation focuses on exposing at-risk and other students to science and mathematics. Students are involved in water quality monitoring and become resources through outreach to other student groups. This student-to-student training model includes Russian students and exchange visits to carry out water quality tests. The foundation also collaborates with the City of Austin in Austin Youth RiverWatch, an intervention program with at-risk students involved in weekly water monitoring and training.

Texas Alliance for Science, Technology & Math Education

EDCI
Texas A&M University
College Station, Texas 77843-4232
Phone (409) 845-0825
Fax (409) 845-9663

The Texas Alliance presents several major programs for teachers and their students. The Texas Teacher Internship Program, an eight-to-ten-week summer teacher internship, involves research projects with scientists and engineers. The Science, Technology, and YOUth Symposium is held annually for ninth through twelfth graders and for teachers from all levels. During the symposium, university faculty present research findings, and workshops and tours are also available. The Biotechnology Teacher Enhancement Project introduces biology teachers to current biotechnology concepts, laboratory techniques, applications, and social and ethical issues. First Step is a project to assist middle school science teachers with hands-on science concepts through links to U.S. Department of Agriculture scientists and county extension agents. The Texas Alliance Conference on TENET (the statewide education electronic network) enhances science, technology, and mathematics teachers' use of TENET.

Texas Environmental Center

P.O. Box 220 S300
Austin, Texas 78767-0220
Phone (512) 447-9669
Fax (512) 473-4097
E-mail mfrech@tec.org

The Texas Environmental Center (TEC) provides educational projects through information technology. One project provides a bulletin board system for central Texas schools involved in the Colorado RiverWatch program and posts the water quality data that students have collected. This system also includes a conservation program called In Concert, in which trainers go to central Texas schools to facilitate learning about energy conservation. Teachers can access information on Texas air, water, and other environmental monitoring programs through the TEC's Web page <http://www.tec.org>. A monthly magazine called GreenBeat! for ages 15 to 25 profiles environmental endeavors and the scientific and social contexts underlying ecological problems. Also available on-line is the Texas Environmental Almanac from the Texas Center for Policy Studies, a document that synthesizes environmental data from state regulatory agencies.

Texas Forestry Association

P.O. Box 1488
Lufkin, Texas 75902-1488
Phone (409) 632-TREE
Fax (409) 632-9461

During the summer, the Texas Forestry Association offers three one-week sessions of the Teachers Conservation Institute. Participants are certified in Project Learning Tree and Project WILD, and field trips cover forestry from the seedling to the mill to the product and back to the seedling. Interdisciplinary hands-on activities look at environmental, social, and economic issues related to forests.

Museums and Science Centers

Austin Children's Museum

1501 West 5th Street
Austin, Texas 78703
Phone (512) 472-2499
Fax (512) 472-2495

The Austin Children's Museum hosts permanent and traveling exhibits on a variety of health- and science-related fields. Student groups may visit the museum for a self-guided tour or may have a focused tour, visiting one exhibit and then doing special activities related to that exhibit. Six education kits on health-related topics, such as Doctor's Tools and Skin, are available for loan to teachers. These kits include the materials and equipment

necessary to study the selected topic and are designed for elementary students. Another kit, on electricity, is called Taking Charge. Staff members or volunteers will visit classrooms with a Stuffee doll that is used to show human anatomy. The museum also has a day camp during the summer and holds camp days on school holidays.

Bolin Oil Company and Wildlife Exhibit

1028 North McDonald
McKinney, Texas 75069
Phone (214) 542-2639
Fax (214) 542-7758

The Bolin Wildlife Exhibit displays more than 100 trophy mounts from around the world. Other exhibits include a diorama of an early 1900s Collin County farm home, along with antique hand tools and farming tools, an antique automobile room, and petroleum-marketing memorabilia. Classes from prekindergarten up can explore the site using a self-guided audio tour.

Brazos Valley Museum of Natural History

3232 Briarcrest Drive
Bryan, Texas 77802
Phone (409) 776-2195
Fax (409) 774-0252

The Brazos Valley Museum of Natural Science offers programs in natural science during museum tours and outreach programs. An on-site mini-zoo houses live animals, and static exhibits focus on fossils, Ice Age beasts, zoology, and archaeology. The museum lends teachers discovery kits that include lesson plans, background information, and specimens for such topics as reptiles, rocks, insects, and amphibians. Traveling exhibits on birds, insects, frontier history, astronomy, and space are scheduled, and teachers can request a menu of program topics and resources.

Brazosport Museum of Natural Science

400 College Drive
Lake Jackson, Texas 77566
Phone (409) 265-7831
Fax (409) 265-6022

Brazosport Museum of Natural Science hosts school visits and occasionally provides school and public programs on seashells, archaeology, minerals, birds, and other topics dealing with the natural environment. Other programs at the museum can be scheduled upon teacher request. Kits are loaned to teachers to assist with instruction on fossils, shells, and rocks.

Cattleman's Museum

1301 West 7th Street
Fort Worth, Texas 76102
Phone (817) 332-7064
Fax (817) 332-8523

The Cattleman's Museum recounts the history of cattle raising. Teachers may request educational materials, including materials from the Texas Farm Bureau and the Texas Department of Agriculture, as well as materials created by museum staff. A sample topic is how to use agriculture and ranching in science teaching. A cross-disciplinary curriculum for fourth grade deals with cattle breeds and care and range management. The education staff occasionally makes trips to schools and has a history kit and videos to lend to teachers.

Centennial Museum at UTEP

University Avenue at Wiggins Road
El Paso, Texas 79968-0533
Phone (915) 747-5565
Fax (915) 747-5411
E-mail fschwein@mail.utep.edu

The Centennial Museum at the University of Texas–El Paso is a natural science museum with university research collections in herpetology and paleontology, an exhibit on trees of the Chihuahuan Desert, and a native plant garden. On Saturdays elementary school children may take hands-on science classes. Staff will work with PTAs interested in bringing hands-on science to their schools. Teachers may borrow a kit on trees of the El Paso area. Three World Wide Web site projects are available to educators through the museum: the Laboratory for Environmental Biology <http://www.utep.edu/~leb/home.html>, the Centennial Museum site <http://www.mmtlc.utep.edu/CENTENNIAL/centennial.HTML>, and El Paso's Regional Biology On-Line Reference <http://www.utep.edu/~epbionet/>.

Children's Museum in New Braunfels

651 Business Loop 35N
New Braunfels Factory Stores, Suite 530
New Braunfels, Texas 78130
Phone (210) 620-0939
Fax (210) 620-5724

The Children's Museum provides a hands-on discovery lab with displays of live animals, preserved specimens, and microscopes to accompany featured exhibits, which generally have a history or geography focus. The exhibits are designed for preschool through grade six children. An advisory group of teachers assists museum staff in planning. The focus during the 1995-1996 school year was the Guadalupe River. Field trips for groups of 10 to 60 are available. An educator's guide is provided when field trips are confirmed. The museum has a home page at <http://pages.prodigy.com/CMNB>.

Texas

Children's Museum of Houston

1500 Binz
Houston, Texas 77004-7112
Phone (713) 522-1138
Fax (713) 524-6471

The Children's Museum of Houston has a variety of permanent exhibits, including two that focus on science (water in the environment and what makes things work). A greenhouse and garden are available for children to visit in self-guided tours. Some after-school programming is available on-site, and teacher workshops are held for new exhibits. Teachers can borrow discovery boxes that use cooperative learning activities to focus on nutrition and culture. The museum coordinates Science by Mail for children in Louisiana, New Mexico, Oklahoma, and Texas. In this program, fourth through ninth graders become pen pals with scientists and receive two packets each school year with hands-on activities.

Corpus Christi Museum of Science and History

1900 North Chaparral
Corpus Christi, Texas 78401
Phone (512) 883-2863, ext. 18
Fax (512) 884-7392
E-mail 72703.3723@compuserve.com

The Corpus Christi Museum of Science and History focuses on post-Columbian history and the natural history of Corpus Christi and the Coastal Bend of Texas. The museum offers K-12 programs and tours that can, for a fee, be customized for visiting classes. Regular museum educational tours are free. After training in their use, teachers can borrow two kits that include artifacts, visual materials, and suggested activities on the topics of dinosaurs and Native Americans. The museum also generates Fact Hunts to focus young visitors' attention on the exhibits. Teachers are admitted free to preview the museum's offerings.

Dallas Museum of Natural History

P.O. Box 150349
3535 Grand Avenue
Dallas, Texas 75315
Phone (214) 421-3466
Fax (214) 428-4356
E-mail abarker@mail.smu.edu

The Dallas Museum of Natural History provides guided tours and formal programs for visiting groups. Teachers can borrow kits that contain a handbook of background information and preserved specimens. Kit topics include mammals, reptiles, fossils, and seashells. Staff scientists occasionally provide teacher workshops and technical assistance on natural science. Written materials can be obtained upon request.

Don Harrington Discovery Center

1200 Streit Drive
Amarillo, Texas 79106
Phone (806) 355-9547
Fax (806) 355-5703

The Don Harrington Discovery Center is a hands-on science center and planetarium. Educational materials are provided for teacher use before and after a visit to the center. A van brings programs on a variety of topics to schools, and shoebox science offers materials for children's experiments. A portable planetarium with an accompanying program is also available to schools. The center hosts an annual Week of Discovery, Astronomy Day, Week of Exploration, Summer Shops, and Overnight Discovery, a program for scout groups.

El Campo Museum of Art, History and Natural Science

P.O. Box 23
2350 North Mechanic
El Campo, Texas 77437
Phone (409) 541-5092
Fax (409) 543-5788

The El Campo Museum of Art, History and Natural Science houses a collection of big-game trophies from around the world and a collection of seashells. The museum hosts seminars on the shell collection for teachers and students and has traveling exhibits. Tours of the big-game trophies are also available.

Fort Worth Museum of Science and History

1501 Montgomery Street
Fort Worth, Texas 76107-3079
Phone (817) 732-1631
Fax (817) 732-7635

The Fort Worth Museum of Science and History offers an Omni Theater, a planetarium, interactive exhibit galleries, and guided tours. Teacher support includes educator workshops, program previews, materials to be used before visits, and history loan kits. A list of programs is available at <http://www.esc11.tenet.edu/fwmsh.html/>. To receive a Museum Field Trip Planner, call (817) 732-1631, ext. 440.

Frontiers of Flight Museum

Love Field Terminal, LB-18
Dallas, Texas 75235
Phone (214) 350-3600
Fax (214) 351-0101

The Frontiers of Flight Museum has resource materials originally obtained from the Federal Aviation Administration for teaching aeronautics and aviation.

The materials are available free to teachers or may be copied at the museum. Scheduled groups are taken on tours of museum exhibits on the history of aviation from Icarus to the Space Age. Displays include artifacts from the Hindenburg airship and models of jets, prop-driven planes, and rockets. A speakers bureau provides schools with living history talks. Once a month the museum has Focus Night, a public seminar on some aspect of flight, usually a historical presentation. The museum also sponsors the Dallas Air Show.

Heard Natural Science Museum & Wildlife Sanctuary, Inc.

One Nature Place
McKinney, Texas 75069
Phone (214) 562-5566
Fax (214) 548-9119

The Heard Natural Science Museum has on-site nature trails and exhibits and provides programs on 25 natural science topics, both at the museum and in schools. The museum offers teacher workshops, such as Project Learning Tree and Project WILD, children's workshops, and scout workshops.

Houston Museum of Natural Science

1 Hermann Circle Drive
Hermann Park
Houston, Texas 77030
Phone (713) 639-4629
Fax (713) 523-4125

Home of 12 permanent exhibit halls, a planetarium, an IMAX Theater, and the Challenger Learning Center, the Houston Museum of Natural Science provides on-site programs and outreach in science education. Some exhibits supplement school curricula in life science, geology, paleontology, and anthropology, and several, such as the Butterfly Center, have curriculum materials for teachers. The Challenger Learning Center, a living memorial from the families of the Challenger astronauts, provides a shuttle simulation for up to 40 students. Half of the group works Mission Control and the other half enters a mock shuttle, where activities include monitoring heart rates and communicating with Mission Control. Each mission has a timely name and includes a mock crisis during which students must exercise teamwork and problem-solving skills to meet a challenge, such as low oxygen levels. The museum provides support for the Houston Independent School District's science curriculum; the school district shares staffing expenses. Outreach programs include Wildlife on Wheels, Science Start (sponsored by a restaurant chain), and several teacher workshops each month.

Insights–El Paso Science Center, Inc.

505 North Santa Fe
El Paso, Texas 79901
Phone (915) 534-0000
Fax (915) 532-7416

Insights–El Paso has 100 hands-on and sensory science exhibits, including light, illusion, solar power, energy, and the human body. Special traveling exhibits are also presented throughout the year. The center offers Saturday science classes, a science camp, and special traveling exhibits. The public and school groups visiting the museum follow self-guided tours. Outreach programs include Science on Wheels, a van that brings more than 25 hands-on science exhibits to schools, plus special events and Saturday science classes.

Laredo Children's Museum

West End Washington Street
Laredo, Texas 78040
Phone (210) 725-2299
Fax (210) 725-7776

The Laredo Children's Museum combines art, science, and computers, with hands-on exhibits. The museum features both traveling exhibits and original locally developed exhibits. Recent exhibits have been on bubbles, momentum, gravity, and the solar system (based on the Magic School Bus). Teachers can bring groups for guided tours and can use activities packets developed by the museum staff for before and after the museum visit. Teachers may borrow a Stuffee doll kit for studying the human body. The staff is available to visit schools for teacher inservice.

Lone Star Brewery and Buckhorn Hall of Horns

600 Lone Star Boulevard
San Antonio, Texas 78204
Phone (210) 270-9469
Fax (210) 270-9465

The Buckhorn Museum at the Lone Star Brewery features antlers from around the world in its Hall of Horns. The Hall of Feathers and Hall of Fins have been added to display birds and fish. A Wax Museum of Texas History is also on-site. Guided tours are available.

Texas

McAllen International Museum

1900 Nolana
McAllen, Texas 78504
Phone (210) 682-1564
Fax (210) 686-1813
E-mail mim@hiline.net

The McAllen International Museum provides exhibits on culture and arts for the people of the Rio Grande Valley and visitors. An important and popular science outreach effort takes interactive learning stations to area elementary schools. This traveling museum provides hands-on activities involving bubbles, puppets, recycling, and weather.

Museum of Health and Medical Science

1515 Hermann Drive
Houston, Texas 77004
Phone (713) 521-1515
Fax (713) 526-1434

The Museum of Health and Medical Science includes a walk-through human body and more than 100 interactive exhibits about how the body works and how to stay healthy. Third through sixth graders can participate in 45-minute hands-on science activities, and the theater provides a variety of video programs. Activities to increase awareness before a museum visit and to support learning after the visit are available, and field trip planning guides are available upon request.

Museum of Texas Tech University

P.O. Box 43191
4th and Indiana Avenue
Lubbock, Texas 79049-3191
Phone (806) 742-2442
Fax (806) 742-1136
E-mail mxdkd@ttacs.ttu.edu

While this museum focuses on the humanities, collections in art, archaeology, ethnology, mammalogy, paleontology, regional history, and textiles have interest for science and mathematics classes.

Museum of the Gulf Coast

700 Procter
Port Arthur, Texas 77640
Phone (409) 982-7000
Fax (409) 982-9614

The Museum of the Gulf Coast hosts school visits to its exhibits, which include wildlife, birds, artifacts, fossils, and shells. The museum is located on Procter, but mail should be sent to 701 4th Street, Port Arthur, Texas 77640.

Museum of the Llano Estacado

Wayland Baptist University
1900 West 7th Street
Plainview, Texas 79072
Phone (806) 296-4735
Fax none

This museum recounts the geological formation of the Llano Estacado and its human history through the 1930s. Displays include Victorian furniture and windmills. Groups can practice early crafts like making soap and chipping flint. Teachers can request printed tour information and activities to assist with preparing children for a museum visit. Local school visits can be tailored to fit curriculum.

Petroleum Museum

1500 Interstate 20 West
Midland, Texas 79701
Phone (915) 683-4403
Fax (915) 683-4509

The Petroleum Museum provides guided tours and programs for schoolchildren and adults. On-site features include a walk-through marine diorama of the Permian Sea and a well blowout. Summer classes, camp-ins, brown bag lunches, and Smithsonian lecturers are additional offerings. Outreach programs on Permian Basin history, geology, dinosaurs, and sharks are available to elementary schools. A puppet show that introduces basic concepts of petroleum can be seen before the visit.

Science Place

P.O. Box 151469
Fair Park
Dallas, Texas 75315-1469
Phone (214) 428-5555
Fax (214) 428-2033

The Science Place is a science and technology center with more than 300 hands-on and interactive exhibits. On-site learning experiences are held in the planetarium, in the TI Founders IMAX Theater, and through daily science demonstrations. The Science Place has a preschool on-site and a science Head Start program. Teacher workshops, hands-on workshops for children, a summer camp, and an overnight camp-in are included in the museum's regular programs. Teachers planning class visits to the science center can receive a packet before they visit and can preview the trip in the museum at no cost. Programs possible for schools include a portable planetarium (which trained teachers may also borrow), all-school assemblies, hands-on activities in classrooms, after-school programs, and kits with hands-on activities in more than 43 topics, including astronomy, light, and physics for elementary teachers. The World Wide Web home page is at <http://www.scienceplace.org>.

Science Spectrum Museum

2579 South Loop 289, Suite 250
Lubbock, Texas 79423
Phone (806) 745-2525
Fax (806) 745-1115

Science Spectrum is an interactive, hands-on science center with three floors of permanent exhibits. Programs feature live demonstrations on the exhibit floor and workshops for youth and families. An Omnimax theater has several different shows each year. Outreach programs include a portable planetarium and presentations with live reptiles and amphibians.

Texas Air Museum

P.O. Box 70
1 mile east of Rio Hondo on FM 106
Rio Hondo, Texas 78583
Phone (210) 748-2112
Fax (210) 748-3500

The Texas Air Museum has artifacts from the beginning of aviation, including from the Vietnam War and the Eastern Front of World War II. German artifacts include two Focke-Wulf 190s on display with 45 other aircraft. A fly-in of pre–World War I aircraft is held each winter. School groups can tour the site with a docent if requested; a small charge is required for school groups.

Texas Energy Museum

600 Main Street
Beaumont, Texas 77701
Phone (409) 833-5100
Fax (409) 833-4282

The Texas Energy Museum provides programs about petroleum-based energy. School groups engage in a 50-minute tour that explains the geology of oil and gas formation, fossils and dinosaurs, early exploration and drilling, refining and petroleum products, and the history of the Spindletop Oil Field. Some guidance can be provided individual teachers needing resources, and printed information describing the museum is available. Special science programs are available for second- to sixth-grade children on Saturdays and during the summer; these programs focus on such topics as chemistry, frogs, and ecology. A Dinosaur Day is held the last Saturday in October.

Texas Forestry Museum

1905 Atkinson Drive
Lufkin, Texas 75901
Phone (409) 632-9535
Fax (409) 632-9461

The Texas Forestry Museum has exhibits about conservation, environmental education, and the history of forestry that are open for visits by school groups. Teachers may use the video lending library on forestry and conservation and may participate in Project Learning Tree workshops.

Texas Memorial Museum

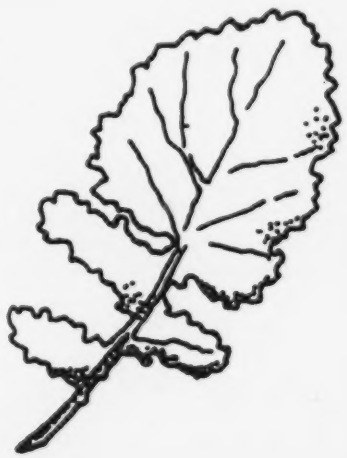
The University of Texas at Austin
2400 Trinity
Austin, Texas 78705
Phone (512) 471-1604
Fax (512) 471-9775

The Texas Memorial Museum is a component of the University of Texas at Austin. In addition to viewing public exhibits, students can access selected collections through the museum Web page at <http://www.utexas.edu/depts/tmm/>. From this Web page, a browser can visit the Material Conservation Laboratory, the Anthropology and History Collections, and the Texas Natural History Collection, which information includes data on fish distribution and maps. These services may be most helpful to secondary students. Fourth- and seventh-grade students are encouraged to write the Anthropology Division for a handout on Texas rock art. A lesson unit on rock art is being developed for area seventh graders. In cooperation with ProjectQUEST, the museum has developed a Macintosh computer program on the vanishing species of Texas. Send three blank DSDD 3.5-inch floppy disks to ProjectQUEST, COM 1, University of Texas at Austin, Austin, Texas 78712-1110, for a copy.

Wichita Falls Museum and Art Center

Two Eureka Circle
Wichita Falls, Texas 76308
Phone (817) 692-0923
Fax (817) 696-5358

The Wichita Falls Museum provides guided tours for school groups, a planetarium show, a laser show, and exhibits. The interactive science gallery has 24 activities, and the Imagination, Texas, gallery is designed for visitors ages 2-12 and their families. Materials to be used before a visit are available to teachers on request. Traveling trunks on pioneer life in the United States and on African animals and peoples can be loaned to teachers. Every Saturday an art and science activity is prepared for drop-in visitors.



Texas

Witte Museum

3801 Broadway
San Antonio, Texas 78209-6396
Phone (210) 820-2181
Fax (210) 820-2187

The Witte Museum is a natural science and natural history resource for teachers. In the fall and winter a newsletter gives updates on exhibits, teacher and student workshops, and special programs for teachers. Evenings for Educators are scheduled each semester so teachers can preview new exhibits and programs. Teacher packets are available for some exhibits. A list of curriculum resource materials for second through fifth grades, a brochure on videos and publications, and a brochure describing live gallery theater performances are available on request. In spring 1997 the H.E.B. Science Treehouse will open with four levels of indoor and outdoor interactive science exhibits and demonstrations.

Nature and Environmental Centers

Aquarena Springs

P.O. Box 2330
1 Aquarena Springs Drive
San Marcos, Texas 78667-2330
Phone (800) 999-9767
Fax (512) 245-7543

Aquarena Springs, managed by Southwest Texas State University, is a natural aquarium at the headwaters of the San Marcos River. The interpretive center has local endangered species, including Texas wild rice; individual exhibits display live eels, gar, and other species. Teachers and students can also visit an archaeological museum with artifacts on display. Glass-bottomed boats tour the springs, and underwater shows are also available.

Armand Bayou Nature Center

P.O. Box 58828
8500 Bay Area Boulevard
Houston, Texas 77258
Phone (713) 474-2551
Fax (713) 474-2552

The Armand Bayou Nature Center offers elementary and secondary school programs, scout badge workshops, and teacher workshops. School programs, which can be on-site or in classrooms, focus on natural history and the environment. Among the on-site learning opportunities is a turn-of-the-century farm. Teacher inservice programs include Project WILD, Project Aquatic WILD, and Project WET.

Austin Nature and Science Center

301 Nature Center Drive
Austin, Texas 78746
Phone (512) 327-8180
Fax (512) 327-8745

Exhibits and educational programs at the Austin Nature and Science Center interpret the ecology of central Texas as it relates to ecosystems from other areas. More than 50 native Texas mammals, birds, reptiles, and amphibians that cannot be returned to the wild are housed at the center. Indoor exhibits provide opportunities for hands-on science, using discovery boxes, computer games, and manipulation of small equipment and specimens. Outdoor trails take the visitor around a pond and past the animal enclosures. Participatory informal science programs available to the public include Nature's Way Preschool, Babies and Beasties, Adventure Outings, and Family Trail Walks. School programs include pond study, central Texas wildlife, rocks and fossils, and birds of prey.

Cibolo Wilderness Trail and Nature Center

Box 9
Boerne, Texas 78006
Phone (210) 249-4616
Fax none

The Cibolo Wilderness Trail and Nature Center provides a location for studying the Hill Country of central Texas. The staff has designed a K-8 curriculum with activities and trail guides to be used on-site, and works with middle and high school teachers and students to develop science fair research projects. The latter outreach program involves developing students' abilities to ask questions that can be answered through research at the center. Follow-up assistance develops student research into projects.

Fossil Rim Wildlife Center

Route 1, Box 210
Glen Rose, Texas 76043
Phone (817) 897-2960
Fax (817) 897-3785

Visitors to the Fossil Rim Wildlife Center learn about endangered species through a guided tour and such programs as a conservation camp for groups. The Species Survival Plan for the white rhino, black rhino, Texas red wolf, cheetah, and 12 other species focuses on researching ways to preserve these endangered animal populations in the wild and conducts breeding programs. Outreach programs include presentations on endangered species of Texas, small animal presentations, and the touch table.

Rob and Bessie Welder Wildlife Foundation

P.O. Box 1400
Highway 77 North
Sinton, Texas 78387-1400
Phone (512) 364-2643
Fax (512) 364-2650

The Rob and Bessie Welder Wildlife Foundation, on a 7,800-acre refuge and research station, provides opportunities for environmental exploration and learning for students and teachers. Programs, which focus on wildlife conservation and management and south Texas ecology, last from half a day to two days and are free. Overnight accommodations and kitchen facilities are provided at a minimal charge for a maximum of two nights. The foundation also offers teacher workshops, including one-day field days on birds and wildflowers, and two nine-day summer institutes centered on various wildlife and ecology topics. Institutes may be taken for credit from Texas A&M, Kingsville.

Texas State Marine Education Center

1209 12th Street
Palacios, Texas 77465
Phone (512) 972-3774
Fax (512) 972-3567

The Marine Education Center, a collaboration of the Palacios Independent School District and the Matagorda County Navigation District, provides on-site active learning about the bay. School groups can test for water quality, collect specimens from research boats, walk a trail of coastal marsh native plants, collect shells, and watch for birds from an observation tower. Teaching lessons that describe on-site activities are available; a brochure describes these and other materials. On request, the staff can conduct teacher workshops on environmental and marine science.

Y.O. Ranch Outdoor Awareness Program

HC 01 Box 555
Mountain Home, Texas 78058
Phone (210) 640-3220
Fax (210) 640-3348
E-mail dreynolds@ktc.com

School groups can use the 40,000-acre Y.O. Ranch as an environmental learning laboratory. A wildlife biology safari allows viewing of 60 species of exotic hoofed stock. Other environmental topics that could be covered at the ranch include ornithology and entomology. Personal development courses include rope courses, group initiative games, and climbing. Outdoor skills courses include orienteering, horseback riding, archery, and riflery. A Discovery Campout can be arranged for school groups. Schools can sign up for programs of one day to nine days. A brochure describes current program offerings.

Professional Organizations

Texas Association of Museums

3939 Bee Caves Road, Building A, #1-B
Austin, Texas 78746
Phone (512) 328-6812
Fax (512) 327-9775

The Texas Association of Museums is a membership organization for museums and science centers in and out of the state. A resource-sharing directory assists members in finding others with expertise in specific topics.

Texas Medical Association

Division of Public Health and Scientific Affairs
401 West 15th Street
Austin, Texas 78701-1680
Phone (512) 370-1463
Fax (512) 370-1635

The Texas Medical Association (TMA) sponsors an annual award program for exceptional elementary and junior and senior high school teachers who significantly influence their students' aptitude and interest in pursuing science and medical careers. School administrators and county medical societies and alliances nominate teachers. Nominees submit a packet describing professional activities and supplying a sample lesson plan used with their students. Cash awards and plaques are given to winners in each division. Student groups may visit the History of Medicine Gallery in the TMA lobby (weekdays and Saturday mornings). Two recent exhibits have covered pathology and medical education, including numerous artifacts and antique medical tools from the TMA collection. TMA has a home page at <http://www.texmed.org>.

Texas Society of Professional Engineers

3501 Manor Road
Austin, Texas 78723
Phone (512) 472-9286
Fax (512) 472-2934

The Texas Society of Professional Engineers (TSPE) provides five programs for middle and high school students. TSPE organizes and coaches middle school teams for the MathCounts competition; the organization also provides materials free to teams. In the National Engineering Design Challenge, a team of high school students, their teacher, and an engineer make working models in response to a problem that changes each year. Also for high school, TSPE administers the TEAMS (Test of Engineering Aptitude in Math and Science), in which student teams answer questions related to engineering problems. TSPE also administers the Texas Engineering Skills Competitition, an individual test in six academic subjects. TEXAS YES! (Youth Engineering Society), another TSPE project, offers student clubs and a guidance network through which teachers can obtain videotapes, brochures, and lists of speakers.

Texas

State Agencies

Bureau of Economic Geology

University Station, Box X
Pickle Research Campus, 10100 Burnet Road
Austin, Texas 78713-7508
Phone (512) 471-1534
Fax (512) 471-0140
E-mail GARNERE@BEGV.BEG.UTEXAS.EDU

The Bureau of Economic Geology offers information on Texas geology to teachers and students. The bureau conducts research in energy resources, mineral resources and statistics, land resources, and geologic mapping. The public can use a reading room with more than 5,000 publications, and a catalog of several dozen geoscience publications of interest to teachers is available. Catalog items include Texas Rocks and Minerals: An Amateur's Guide, Geology of Texas Map, and Approaches to Environmental Geology. Most items are under $5. The bureau also has a home page on the World Wide Web at <http://www.utexas.edu/research/beg/>.

Railroad Commission of Texas

Alternative Fuels Research & Education Division
P.O. Box 12967
1701 North Congress
Austin, Texas 78711-2967
Phone (800) 64-CLEAR
Fax (512) 463-6702
E-mail garrisonk@rrc.state.tx.us

Secondary teachers can receive curriculum materials on alternative fuels from the Railroad Commission of Texas, which will also provide training on that topic. Training materials include a 400-page packet of activities, a videotape, and lists of resources and contacts. The commission also sponsors an annual program called the Propane Super Star award, in which students and teachers are eligible to participate.

Texas Department of Transportation

125 East 11th Street
Austin, Texas 78701
Phone (512) 416-3171
Fax (512) 416-2319

The Texas Department of Transportation has a kit called Giving Nature a Hand for sixth- through eighth-grade classrooms interested in vegetation management. The Texas wildflowers brochure available from the department's travel office at (512) 483-3705 is also helpful.

Texas General Land Office

1700 North Congress, Room 885
Austin, Texas 78701
Phone (512) 463-5339
Fax (512) 475-1415

The Texas General Land Office (TGLO) administers the Environmental Challenge grant program, which is funded by the H.E.B. grocery company. Grants of $100-$750 are awarded to teachers. Through an interagency effort, videos on alternative fuels are available for teachers. A newsletter, EnviroNomics, is free to educators. The TGLO administers the Natural Resources Inventory on the Internet <http://www.nri.state.tx.us/nri>. The agency provides maps that show not only highways but also geophysical features; it also has monitoring stations and shares data collected at those stations.

Texas Natural Resource Conservation Commission

Environmental Education Section
P.O. Box 13087
Austin, Texas 78711-3087
Phone (800) 64-TEXAS
Fax (512) 239-0055

The Texas Natural Resources Conservation Commission (TNRCC) can provide educational resources on environmental topics, including air quality, water quality, and waste management. Information is available for grades K-12 and adult. Each summer TNRCC's graduate-level course, Teaching Environmental Sciences, is offered to K-6 teachers, in partnership with state universities. This course combines hands-on activities, resources, and field trips to provide real-world experiences that are readily useful in the classroom. Teachers pay a $25 registration fee; TNRCC or other sponsors provide the remainder of the tuition. TNRCC has a home page at <http://www.tnrcc.state.tx.us>.

Texas Parks & Wildlife

4200 Smith School Road
Austin, Texas
Phone (512) 328-6035
Fax (512) 328-5632

Texas Parks and Wildlife coordinates teacher education in Project WILD, Aquatic WILD, and Adopt-a-Wetland. Teachers who participate in this free training receive an extensive activity guide. Staff can provide teachers with a packet of specific information on environmental topics. The department can be reached at (800) 792-1112, and also has a home page at <http://www.tpwd.state.tx.us/tpwd.htm>.

Texas

State-Based Federal Programs

Ag in the Classroom State Leader

Texas Farm Bureau
P.O. Box 2689
Waco, Texas 76702-2689
Phone (817) 772-3030
Fax (817) 751-8732

The Texas Farm Bureau Ag in the Classroom program provides resource materials on the history, geography, economics, and ecology of agriculture for students in grades 1 through 12. An extensive fourth-grade curriculum includes lesson plans, background information, and resources. A brochure describes these materials.

Aviation Education Resource Center

Texas Southern University Airway Science Program
3100 Cleburne Avenue
Houston, Texas 77004
Phone (713) 313-1847
Fax (713) 313-1821
E-mail nettey@tsu.edu

The Aviation Education Resource Center is a repository for Federal Aviation Administration K-12 curriculum materials on aerospace and aviation across all disciplines. A materials list is available upon request.

Aviation Education Resource Center

Texas State Technical College,
Aerospace Technologies Librarian
3801 Campus Drive
Waco, Texas 76705
Phone (817) 799-3611
Fax (817) 867-2900

The Aviation Education Resource Center is a repository for Federal Aviation Administration K-12 curriculum materials on aerospace and aviation across all disciplines. A materials list is available upon request.

Aviation Education Resource Center

Palo Alto College, Aviation Department
1400 West Villaret
San Antonio, Texas 78224
Phone (210) 921-5173
Fax (210) 921-5177
E-mail bhoover@accd.edu

The Aviation Education Resource Center is a repository for Federal Aviation Administration K-12 curriculum materials on aerospace and aviation across all disciplines. A materials list is available upon request.

Brooks Air Force Base

HSC/PA
2510 Kennedy Circle, Suite 1
Brooks Air Force Base
San Antonio, Texas 78235-5120
Phone (210) 536-3234
Fax (210) 536-3235

Brooks Air Force Base can provide teachers with a list of volunteer speakers on a wide range of topics, including aerospace physiology, sleep and biorhythms, cognition enhancers, astronomy, and laser technology. On the base, 14 laboratories are involved in biomedical research and optics, and tours are available for high school students. Tours include hyperbaric chambers and a spatial disorientation machine used in space flight research. Each year, Aerospace Day brings math and science students into contact with astronauts and laboratory researchers.

Environmental Protection Agency, Region 6

Office of External Affairs (6XA)
1445 Ross Avenue, Mail Stop 6
Dallas, Texas 75202-2733
Phone (214) 665-2200
Fax (214) 665-2118
E-mail Gray.David@EPAmail.EPA.gov

The Environmental Protection Agency's (EPA) Region 6 Office of External Affairs has environmental education teacher resources for grades K-12 including coloring books, curricula, brochures, and posters.

Flower Garden Banks National Marine Sanctuary

1716 Briarcrest Drive, Suite 603
Bryan, Texas 77802
Phone (409) 847-9296
Fax (409) 862-3786
E-mail sdupuy@ocean.nos.noaa.gov

The Flower Garden Banks is a coral reef 100 miles offshore. The agency has no visitors center but does have educational materials that include posters, brochures, and a sixth-grade curriculum. Presentations are possible for schools in the vicinity, and future plans include a summer tour of the coral reef for teachers and development of a volunteer corps to demonstrate scuba gear and present other information to schools. A packet of information can be assembled for teachers upon request.

Texas

NASA Teacher Resource Center

Johnson Space Center
Mail Code AP-2
Houston, Texas 77058
Phone (713) 483-8696
Fax (713) 483-4876

The NASA Teacher Resource Center provides teachers with learning materials and assistance with electronic access. Print materials, such as lesson plans and activity workbooks, are available on-site for teachers to copy. Teachers may borrow videotapes on a variety of space-related topics from the film library. Staff facilitates teacher access to Spacelink, NASA's electronic network, and can provide teachers with identification codes to access Spacelink from their schools. Interested educators should send a request to Spacelink Administration Education Programs Office, Mail Code CL01, Marshall Space Flight Center, Huntsville, AL 35812-0001, or call (205) 961-1225. An Internet address for requesting Spacelink access is <comments@spacelink.msfc.nasa.gov>. NASA maintains a World Wide Web site with a home page for each shuttle mission at <http://shuttle.nasa.gov>.

Pantex Plant

U.S. Department of Energy
P.O. Box 30020
Amarillo, Texas 79117
Phone (806) 477-5038
Fax (806) 477-5743
E-mail dhallida@pantex.com

The Pantex Plant is the only site in the United States where nuclear weapons are disassembled. The plant's active school outreach program sends scientists to schools as speakers, science fair judges, and career day participants. Students who are 16 and older can tour the plant. Pantex offers teacher workshops on radiation; other topics are being developed for future workshops. Pantex hosts a regional science bowl in which high school students compete in math and science. The Department of Energy pays for the winning team to attend the national championship. The Pantex Information Fair is a two-day event held in the Amarillo Convention Center. School groups attend this free fair for which the technical departments of the plant put on exhibits that include many hands-on activities. Some departments demonstrate basic science concepts and others present the specific activities of the plant.

Space Center Houston

1601 NASA Road
Houston, Texas 77058
Phone (713) 244-2145
Fax (713) 283-7727

Space Center Houston is an educational and entertainment center with interactive exhibits, IMAX movies, and special tram tours of Johnson Space Center. Educational programs offered include local and out-of-town programs for schools; teacher programs, including an Annual Educators Conference; opportunities to hear astronauts, scientists, and engineers from Johnson Space Center; day camps; and overnight programs for scout groups. Before visiting Space Center Houston, teachers receive a confirmation packet of materials that includes classroom activities and reproducible treasure hunts. Brochures describing all programs are available upon request.

Texas 4-H

Texas A&M University
7607 Eastmark Drive, Suite 101
College Station, Texas 77843-2473
Phone (409) 845-1214
Fax (409) 845-6495
E-mail r-howard1@tamu.edu

The Texas 4-H is the central office for all curriculum development and evaluation for 4-H chapters in the state. These curriculum materials include K-12 lesson plans and activity sheets on natural and life science topics, including water quality, wildlife management, experimental science, and plant and animal science. Teachers should request materials from youth education staff at the local county extension office. The national clearinghouse for curriculum produced by state 4-H offices will be especially useful for science teachers. Inquire about these materials from Cooperative Research and Educational Extension Service, at Ag Box 0925, Room 3444, South Building, Washington, DC 20250-0925, or call (202) 720-3891, or e-mail <asmith@reeusda.gov>.

Texas Space Grant Consortium, NASA

2901 North IH 35, Suite 200
Austin, Texas 78722-2348
Phone (512) 471-3583
Fax (512) 471-3585
E-mail seybold@mail.utexas.edu

The Texas Space Grant Consortium hosts summer Lift Off workshops for teachers of 6-12 science and mathematics. The staff is available as speakers and consultants on topics related to space, engineering, and physics. A project called Sky View involves high school teams competing to design effective remote sensing data collection devices. The consortium has a page on the World Wide Web at <http://www.utexas.edu/tsgc/>.

U.S. Department of Agriculture

Natural Resources Conservation Service,
Texas State Office
101 South Main Street
Temple, Texas 76501
Phone (817) 774-1228
Fax (817) 774-1388

The Natural Resources Conservation Service (NRCS) state office, works in partnership with local county conservation districts, and offers a variety of educational services. With adequate notice, staff at local field offices can give classroom and school presentations. Teacher workshops on soil and water conservation, erosion, and Project Learning Tree feature hands-on activities. Teacher packets include a variety of information and activities. A fourth-grade curriculum on water quality and quantity is being developed and is expected to be available in 1997. NRCS sponsors a Soils Stewardship Week, during which poster and essay contests are held. Some local districts offer summer camps, such as range camp and conservation cowboy camp. Information can be obtained from state or local offices.

University Affiliates

Edwards Aquifer Research and Data Center

Room 248, Freeman Building
Southwest Texas State University
San Marcos, Texas 78666
Phone (512) 245-2329
Fax (512) 245-2669

On Aquatic Studies Field Days, sponsored by the Edwards Aquifer Research and Data Center (EARDC), science students and their teachers hear presentations on the aquifer and its biological community. Guided groups collect invertebrates from an artesian well, the San Marcos River, or a small stream and view exhibits of species from the area. Weeklong coed summer camps are also available. EARDC has a home page on the World Wide Web at <http://www.eardc.swt.edu>.

McDonald Observatory Visitor Center

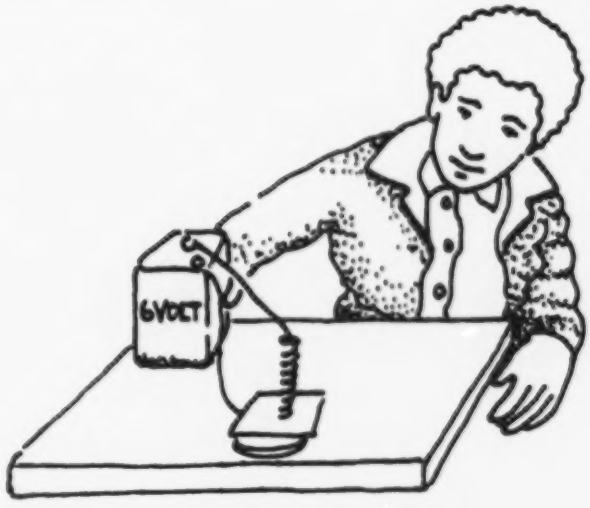
Highway 118 North
P.O. Box 1337
Fort Davis, Texas 79734-1337
Phone (915) 426-3640
Fax (915) 426-3641
E-mail wetzel@astro.as.utexas.edu

The McDonald Observatory offers daytime and evening telescopic viewing to schools and the general public at the W. L. Moody Visitors' Information Center and Public Observatory. At the visitors' center school groups and astronomy educators can discuss applications of current observatory research. To arrange private tours, contact the visitors' center at least one month before a visit. Groups wishing to attend a scheduled star party and spend the night in the nearby town of Fort Davis or the state park can get lodging information from the center. Future projects include a robotic telescope that school groups will be able to operate from their school site terminal. On the World Wide Web, use the following address: <http://www.as.utexas.edu/mcdonald/mcdonald.html>.

University of Texas Marine Science Institute

Marine Education Services
750 Channelview Drive
Port Aransas, Texas 78373
Phone (512) 749-6729
Fax (512) 749-6703
E-mail rtinnin@tenet.edu

The University of Texas Marine Science Institute is on the northeastern tip of a barrier island in the Gulf of Mexico. Throughout the year institute personnel conduct research in ecology, physiology, microbiology, marine chemistry, organic geochemistry, and other sciences. Programs for schools build an understanding of the marine environment through measurement, observation, and sampling. Dormitories are available for group use during multi-day programs. Programs can include laboratory work and activities on a research vessel where students collect and analyze water samples, sediment, and plankton. The visitor center has seven aquaria with typical Texas coastal habitats and the organisms that live in them. Videos are regularly shown in the auditorium. Weekend workshops are provided for educators at all levels so they can gain proficiency in marine science through exploring such topics as coastal birds, astronomy, marine aquaria. See the institute's home page on the World Wide Web at <http://wwwutmsi.zo.utexas.edu>.



National Organizations

Federal Agencies

Bureau of Land Management, Eastern State Offices

Education Coordinator
7450 Boston Boulevard
Springfield, Virginia 22153
Phone (703) 440-1668
Fax (703) 440-1551
E-mail gwalsh@es.blm.gov

The Bureau of Land Management, Eastern State Office, serves Arkansas and Louisiana among other states. The agency provides brochures on a variety of topics, including neotropical migratory birds, bats, and the life cycle of salmon, riparian habitat management, and waterfowl and wetlands. They can put together for teachers an information packet of government brochures, posters, photos, and parts of curricula to help build understanding of ecosystem management issues.

Center for Disease Control, Office of Public Affairs

U.S. Department of Health and Public Services
1600 Clifton Road, N.E.
Atlanta, Georgia 30333
Phone (404) 639-3286
Fax (404) 639-7394

The Center for Disease Control (CDC) has information on a variety of topics related to health, disease, and epidemiology. The Office of Public Affairs can direct calls to appropriate departments, depending on the nature of the inquiry. For example, if the interest is in AIDS, a teacher can arrange for classroom calls, where the whole class interacts through a conference call set up by calling the AIDS hotline in advance—(800) 342-AIDS or, in Spanish, (800) 342-SIDA. The CDC can also direct you to other sources of information. For example, for AIDS there is the CDC National AIDS Clearinghouse that can provide lists of resources and organizations and where you can order materials, (800) 458-5231. The Web site <http://www.cdc.gov> is another source of information.

Energy Efficiency and Renewable Energy Clearinghouse

U.S. Department of Energy
P.O. Box 3048
Merrifield, Virginia 22116
Phone (800) DOE-EREC
Fax (703) 893-0400
E-mail energyinfo@delphi.com

The Energy Efficiency and Renewable Energy Clearinghouse (EREC) responds to phone, mail and electronic inquiries on energy efficiency and renewable energy technologies. Staff members analyze questions and select appropriate information to send. EREC can be reached by phone (800) DOE-EREC; TDD (800) 273-2957; computer bulletin board (800) 273-2955; internet e-mail (energyinfo@delphi.com); or FAX (703) 893-0400. Additionally, EREC's sister service, Energy Efficiency and Renewable Energy Network (EREN) can be accessed through <http://www.eren.doe.gov>. This site provides access to on-line catalogs, lists of vendors, data bases, other Internet resources, and more. The Department of Energy has a home page at <http://www.doe.gov> and the Center for Sustainable Development is at <http://www.sustainable.doe.gov>.

Forest Service, Office of Public Affairs

U.S. Department of Agriculture
P.O. Box 96090
Washington, D.C. 20090
Phone (202) 205-1760
Fax (202) 205-0885

The Office of Public Affairs of the U.S. Forest Service has a national forest guide listing the 155 national forests and 20 grasslands administered by the Forest Service. The office will also provide printed materials to answer specific questions. (The office produces more than 2,700 pieces of printed material, but no comprehensive list is available to the public.) The district offices can provide teacher packets, posters, and Smokey Bear (fire) and Woodsy Owl (recycling) curricular adjunct materials, including activity books and coloring sheets. The offices sponsor such activities as National Fishing Week and National Wildflower Week, and Forest Service professionals can, as time permits, visit classrooms. The Forest Service also sponsors Natural Resource Conservation Education (NRCE). NRCE works with a variety of partners, including federal and state programs and nonprofit educational agencies, to provide structured educational experiences to help people understand and appreciate natural resources. Current projects include Tree Trunks (forest education materials in trunks that educators may borrow), Investigating Your Environment (a hands-on secondary school program), and Ecosystems Matter Toolkit (middle school). More information about the NRCE program and contact information for regional coordinators is available from the national office at (202) 205-1545. The home page for the Forest Service is <http://www.fs.fed.us>.

GLOBE Program

744 Jackson Place N.W.
Washington, D.C. 20503
Phone (800) 858-9947
Fax (202) 395-7611
E-mail info@globe.gov

National Oceanic and Atmospheric Administration (NOAA) is the lead agency in the Global Learning and Observations to Benefit the Environment (GLOBE) program, an international program involving K-12 students and teachers. Environmental scientists work with educators to determine what kinds of environmental measure-

ments students could take to assist the scientists in their research. Students then take these measurements in every state and in more than 35 countries. Students post their data to the Internet, compare their data to those collected by students in different locations, and communicate with other students and the scientists through e-mail. The GLOBE project offers training sessions around the country for teachers to learn about the kinds of measurements needed, how to collect the data, and what kind of instrumentation is required. They receive a teachers' guide with activities for classroom use. These three-day workshops are free; school districts must provide classroom instruments and Internet access for teachers to participate in the project. Information on the program and training schedule, as well as other kinds of information, can be accessed through the home page <http://www.globe.gov>.

NASA Marshall Space Flight Center

Educational Programs Office CLO 1
Marshall Space Flight Center, Alabama 35812
Phone (205) 544-7548
Fax (205) 544-8899

The NASA Marshall Space Flight Center in Alabama serves Arkansas and Louisiana teachers. (Teachers in Oklahoma, New Mexico, and Texas are served by the NASA Johnson Space Center in Houston.) Marshall Space Flight Center supports teacher training and inservice programs, provides tours of selected center facilities, participates in career fairs, and will provide educational materials to teachers through the Teacher Resource Center. It disseminates information on the Space Science Student Involvement Program and provides science fair certificates for projects related to space. Schools can request a visit by a NASA aerospace education specialist, who can conduct teacher workshops and programs for students. Requests should be on school letterhead. Teachers can access NASA Spacelink, NASA's electronic resource for educators, through computer modem at (205) 895-0028 or through the Internet at <http://spacelink.msfc.nasa.gov>. NASA maintains a World Wide Web site with a home page for each shuttle mission at <http://shuttle.nasa.gov>.

NASA Teacher Resource Center

U.S. Space and Rocket Center
1 Tranquility Base
Huntsville, Alabama 35807
Phone (205) 544-5812
Fax (205) 837-6137

The NASA Teacher Resource Center at the U.S. Space and Rocket Center in Alabama can provide Louisiana and Arkansas teachers with materials and assistance with electronic access. Print materials, such as lesson plans, are available on-site for teachers to copy, as are more than 400 videotapes. Packets of information that include lesson plans and activities are free. A catalog of videos and slides may be obtained from NASA-CORE, Lorain County JVS, 15181 Rt 58S, Oberlin, Ohio 44074 or by calling (216) 774-1051 ext. 293. The Alabama center conducts a variety of workshops for teachers.

National Academy of Sciences

2101 Constitution Avenue, N.W.
Washington, D.C. 20418
Phone (202) 334-2000
Fax (202) 334-2158

The National Academy of Science (NAS) researches and publishes reports relevant to science and mathematics education, including international comparative studies and descriptions of mathematics assessments. NAS members played a critical role in the orchestration and development of the National Science Education Standards published in 1995. The NAS location on the World Wide Web is <http://www.nas.edu>.

National Education and Training Center, U.S. Fish and Wildlife Service

4040 North Fairfax Drive, Room 304
Arlington, Virginia 22203
Phone (703) 358-1781
Fax (703) 358-2283
E-mail Duncan_MacDonald@mail.fws.gov

The U.S. Fish and Wildlife Service provides wildlife-related materials to teachers through this location and through its regional offices. The national office has curriculum materials available, including a videotape called A Home for Pearl. This story of habitat conservation comes with a teacher's guide for grades 4 through 6. Other programs are available through the regional offices. The regional office for teachers in New Mexico, Oklahoma, and Texas is in Albuquerque at (505) 766-2321; and for Arkansas and Louisiana it is in Atlanta at (404) 679-4000.

National Energy Information Center, E1-231

U.S. Department of Energy
Forrestal Building, Room 1F048
Washington, D.C. 20585
Phone (202) 586-8800
Fax (202) 586-0727
E-mail infoctr@eia.doe.gov

The National Energy Information Center has a booklet, Energy Education Resources, that directs teachers to free or low-cost resources. This booklet can also be acquired from the Bookshelf link of the home page <http://www.eia.doe.gov>. The center has energy information sheets and compilations of energy statistics available both on-line and by phone request.

National Oceanic and Atmospheric Administration

U.S. Department of Commerce
Office of Public Affairs, Room 6013, Herbert Clark Hoover Building
Washington, D.C. 20230
Phone (202) 482-6090
Fax (202) 482-3154

The National Oceanic and Atmospheric Administration (NOAA) conducts research and gathers data about the global oceans, atmosphere, space, and sun. The public affairs office can provide information on the different agencies within NOAA, posters, and directions to data sources. The home page <http://www.noaa.gov> links to other home pages in NOAA. Environmental Information Services, for example, provides data including satellite images, weather maps, and sea surface temperatures and also has documents that describe what you can do with the data. You can either download the data sets or order them from the NOAA National Data Centers.

National Park Service

U.S. Department of the Interior
P.O. Box 37127
1849 C Street, N.W.
Washington, D.C. 20013-7127
Phone (202) 208-4747
Fax none

The National Park Service, an agency of the U.S. Department of the Interior, manages 51 national parks and oversees more than 300 national monuments, historic sites, memorials, seashores, and battlefields. The Parks as Classrooms program is sponsored by the National Park Foundation; rangers at each park can provide information about the program at that park. The national office will send a teacher's packet that includes posters, maps, activities, and information on a variety of topics. A home page is <http://www.nps.gov>.

National Science Resources Center

Arts and Industries Building, Room 1201
Smithsonian Institution
Washington, D.C. 20560
Phone (202) 357-2555
Fax (202) 786-2028
E-mail lbenton@nas.edu

The National Science Resources Center (NSRC) is operated by the Smithsonian Institution and the National Academy of Sciences to improve the teaching of science. The NSRC develops curriculum, sponsors outreach activities in leadership development, provides technical assistance, and collects and disseminates information about exemplary teaching resources. Elementary Science Leadership Institutes are held each summer at the Smithsonian Institution. The Science and Technology for Children curriculum is available from the publisher; telephone (800) 227-1150, use World Wide Web at <http://www.carosci.com> or Internet at <74504.3605@compuserve.com>. The NSRC is a link on the Smithsonian Institution's home page <http://www.si.edu/>.

National Weather Service, National Oceanic and Atmospheric Administration

Office of Meteorology, SSMC2, 14th Floor
1325 East West Highway
Silver Spring, Maryland 20910
Phone (301) 713-0622
Fax none

The National Weather Service, in conjunction with the American Meteorological Society, has established Project Atmosphere, which prepares at least two teachers in each state to be atmospheric education resource agents to act as a bridge between meteorologists and teachers. A popular publication available either from the national office or from local forecast offices is a five-part publication on severe weather written in cooperation with the American Red Cross. This series focuses on safety and includes scientific detail about hurricanes, tornadoes, and other meteorological events. Warning and coordination meteorologists provide information and service within local forecast areas. Many local forecast offices have Internet home pages; the home page of the National Weather Service is <http://www.nws.noaa.gov>. Another Internet resource is WeatherNet, maintained by the University of Michigan at <http://cirrus.sprl.umich.edu/wxnet>. This site lists more than 300 weather-related organizations and links to their home pages, as well as forecasts, images, and other weather information.

U.S. Department of Health and Public Services

National Institutes of Health,
Office of Science Education
6100 Executive Boulevard, Room 5H01
Rockville, Maryland 20892
Phone (301) 402-2469
Fax (301) 402-3034

The National Institutes of Health (NIH) is made up of 24 institutes, centers, and divisions that conduct and support research on health-related topics. The NIH home page, <http://www.nih.gov/>, links to the home page of each of the institutes. The Office of Science Education at NIH has its own home page at <http://irma.od.nih.gov/> especially designed for teachers and students. This home page, Snapshots of Medicine and Health, includes research in the news, people doing research, cool links to other sites on the Web, and, currently under construction, a hands-on feature that will allow for posting of questions and answers.

U.S. Environmental Protection Agency

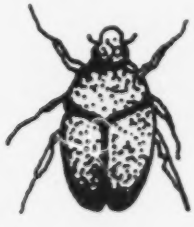
Public Information Center
401 M Street, S.W.
Washington, D.C. 20460
Phone (202) 260-2080
Fax (202) 260-6257
E-mail public-access@epamail.epa.gov

The Public Information Center of the Environmental Protection Agency (EPA) puts together free teacher packets of information, including lesson plans, posters, and activity books for children, based on grade level (K-6 or 7-12). Materials are also available from regional EPA offices.

U.S. Geological Survey, Education Committee

U.S. Department of the Interior
101 East National Center
Reston, Virginia 21092
Phone (703) 648-7114
Fax (703) 648-7069

A list of educational resources available from the U.S. Geological Survey (USGS) can be obtained from the Geologic Inquiries Group at the above address. Free packets of leaflets, booklets, and references include Teacher's Packet of Geologic Material and Selected Packet of Geologic Teaching Aids. Teacher packets that include posters, activities, and background information cover such subjects as Map Adventures (K-3), What Do Maps Show (5-8), Global Change (6-9), and Exploring Maps (7-12). A series of water posters covers wastewater, wetlands, groundwater, water pollution, and navigation; each poster includes activities, definitions, and questions. Other resources are fact sheets, resource lists, booklets, and posters. The USGS operates Earth Fax on Demand, a fax-back system. Dial (703) 648-4888 and select material desired from a recording, enter your fax number, and the material requested is faxed to that number. A learning Web site for teachers and students is at <http://www.usgs.gov/education/>. For the SEDL region, material and information can be obtained from the Earth Science Information Center—Lakewood, Colorado; for information on procedures and available resources, call (303) 202-4200. The USGS has a home page at <http://www.usgs.gov>.



Other National Organizations and Societies

American Association for the Advancement of Science

1333 H Street, N.W.
Washington, D.C. 20005
Phone (202) 326-6400
Fax (202) 371-9849

The American Association for the Advancement of Science (AAAS) is a federation of scientific and engineering societies. An annual meeting, Reform for School Science, brings together selected educators to work in focus groups, and an annual publication, This Year in School Science, results from that meeting. Teachers who join AAAS subscribe to the journal Science as well as to Science Books and Films. Many other AAAS publications are of interest to teachers, including IDEAAAS: Sourcebook for Science, Mathematics, and Technology Education (contact publisher at (914) 273-2226), a directory of resources, organizations, and projects to improve school science. Project 2061 is a long-term initiative of AAAS that was begun in 1985 and developed mathematics, natural and social science, and technology curriculum reform tools for local, state, and national designers. Benchmarks for Science Literacy, a Project 2061 publication [contact publisher at (800) 451-7556], specifies levels of student progress in scientific understanding from elementary through secondary school.

American Association of Physics Teachers

One Physics Ellipse
College Park, Maryland 20740-3845
Phone (301) 209-3300
Fax (301) 209-0845
E-mail cjohnson@aapt.acp.org

The American Association of Physics Teachers (AAPT) is a professional organization for teachers of physics and physical sciences in the United States and abroad. As a benefit of membership, teachers receive a choice of the American Journal of Physics (college) or the Physics Teacher (middle and high school). Members receive a publications and products catalog, discounts for meeting registrations, and a quarterly publication, The Announcer, which addresses organization news. AAPT also provides a link to the American Institute of Physics (AIP). The AIP gives members assistance in job placement and provides Physics Today, a monthly publication of changes and developments in physics.

BEST COPY AVAILABLE

American Astronomical Society Education Office

Astronomy Department
University of Texas at Austin
Austin, Texas 78712-1083

Phone (512) 471-6503
Fax (512) 471-6016
E-mail aas@astro.as.utexas.edu

The American Astronomical Society (AAS) Education Office has a career brochure entitled A New Universe to Explore: Careers in Astronomy. The society also offers a summer teacher resource agent training program in astronomy, designed especially for K-8 teachers. The four-week program is designed to help teachers become change agents in astronomy education and is open to teachers from across the nation. Participants are required to present workshops to teachers in their own school district during the two years that follow their training. Applications for the summer program and information about agents willing to present workshops are available from the Education Office. Additional information is also available at the AAS website <http://www.aas.org/~aastra/aastra.html>.

American Cancer Society

National Office
1599 Clifton Road, N.E.
Atlanta, Georgia 30329

Phone (800) 227-2345
Fax (404) 325-2217

The American Cancer Society provides teachers with kits, brochures and pamphlets, videos, posters, and computer disks—all designed to promote health education. Materials to prevent and stop tobacco consumption, for example, include lessons, activities, and posters. Some materials, such as transparencies and videos on the cell, can be used in biology lessons outside the health curriculum. The national office can help teachers locate state divisions and local units to find speakers and to order materials. Each state offers curriculum materials; the exact resources will vary from state to state. Teaching kits are usually free but limited to one to a school and are intended for use by any teacher within that school. Videos are available for loan and printed material is usually free. The society has a home page on the World Wide Web at <http://www.cancer.org>.

American Chemical Society

1155 16th Street, N.W.
Washington, D.C. 20036

Phone (202) 872-4600
Fax (202) 833-7732

The American Chemical Society (ACS) provides resources to further public understanding of chemistry. Produced in cooperation with the American Institute of Physics, WonderScience contains hands-on activities for grades 4 through 6 (call (800) 333-9511). Other print resources include Kids and Chemistry, a handbook with activities and demonstrations for local volunteers to use during National Chemistry Week; Chemunity News, a free newsletter about the activities of the ACS Education Division; Science Fair Projects: A Guide for Grown-ups; and Apples, Bubbles, and Crystals—Your Science ABCs, a book for K-2 children that links poems to activities children can do with an adult. The FACETS (Foundations and Challenges to Encourage Technology-based Science) curriculum provides teachers in grades 6-8 with 24 problem-solving modules; call the publisher at (800) 258-5622. Videotapes on minority scientists, inventors, and students can be purchased. ACS offers teacher training including "Operation Chemistry," for elementary and middle school educators, and workshops for teachers of Chemistry in the Community, the ACS high school chemistry course for college-bound students. The ACS World Wide Web home page is at <http://www.acs.org>.

American Council on Science and Health

2nd Floor, 1995 Broadway
New York, New York 10023- 5860

Phone (212) 362-7044
Fax (212) 362-4919
E-mail acsh@acsh.org

The American Council on Science and Health (ACSH), a national consumer-education consortium concerned with issues of food, chemicals, drugs, lifestyle, the environment, and human health, publishes a quarterly magazine, Priorities. The public may purchase informative booklets and special reports, for example, Biotechnology and Food, Diet and Cancer, Facts about Fats, and Beef Controversy. ACSH has a home page at <http://www.acsh.org>.

American Forests

P.O. Box 2000
Washington, D.C. 20013-2000

Phone (202) 667-3300
Fax (202) 667-7751

American Forests, a national nonprofit conservation organization, sponsors a comprehensive teaching program called Living Classrooms. This multidisciplinary program teaches history, science, conservation, and environmentalism, using trees as a focal point as students plan, plant, and care for the trees the program provides. The seedlings are provided from the Famous and Historic Trees collection and have been grown from seeds of trees associated with significant events or people in U.S. history. The Living Classrooms program supplies trees, planting kits, books with lessons, activities, and reading material, videos, and other materials. The program is expensive, but the cost can be borne by corporate donors in the community. American Forests also sponsors some teacher workshops and has some books and tree guides available. The organization's home page is available on the World Wide Web at <http://www.amfor.org>.

American Geological Institute

4220 King Street
Alexandria, VA 22302-1502
Phone (703) 379-2480
Fax (703) 379-7563
E-mail ehrinfo@agi.umd.edu

The American Geological Institute (AGI) can assist K-12 teachers with resources for earth science. AGI publishes the *Earth-Science Education Resource Directory*, which includes more than 1000 products from more than 300 organizations and is available to teachers for $19.95. A brochure, "Careers in the Geosciences," is also available from AGI. The first ten copies of the brochure are free; additional copies are available for a minimal fee. Please contact the AGI Publications Center at (301) 953-1744 to order copies of the brochure or the directory. Workshops for local schools can be provided, and a minority student geoscience scholarship program encourages geological science careers. Call for a list of other available materials. AGI has a home page at <http://agi.umd.edu/agi/agi.htmo>.

American Geophysical Union

2000 Florida Avenue, N.W.
Washington, D.C. 20009
Phone (202) 462-6900
Fax (202) 328-0566

The American Geophysical Union (AGU) provides public information on what is known about the earth, its planetary neighbors, and the space around them. Journals, publications, and reports can be ordered dealing with atmosphere, ocean, solid earth, hydrologic, and space sciences. The organization's publication, Earth in Space, contains earth science articles for classroom use. Annotated slide sets about earth and space sciences are available. The AGU's World Wide Web address is <http://www.agu.org>.

American Institute of Aeronautics and Astronautics

1801 Alexander Bell Drive
Reston, Virginia 22091
Phone (703) 264-7500
Fax (703) 264-7551
E-mail wilv@aiaa.org

The American Institute of Aeronautics and Astronautics can help teachers find local and university student chapters for activities and information related to aerospace engineering careers. Activities vary widely across all 147 student chapters, several of which may sponsor precollege programs.

American Institute of Architects

1735 New York Avenue, N.W.
Washington, D.C. 20006-5292
Phone (202) 626-7300
Fax (202) 626-7587

The American Institute of Architects (AIA) promotes and supports teacher use of Learning by Design, an environmental education curriculum. Regional AIA coordinators facilitate Learning by Design teacher workshops; AIA's main office can help identify those coordinators. Other materials of interest to teachers include The Sourcebook II, with information about existing environmental education programs and organizations. A science unit for elementary grades called Why Do Buildings Stand Up? is available. AIA's World Wide Web home page is at <http://www.aia.org/homeban.map>.

American Institute of Biological Sciences

1441 I Street, N.W., Suite 200
Washington, D.C. 20001-4521
Phone (202) 628-1500
Fax none
E-mail bioscience@aibs.org

The American Institute of Biological Sciences (AIBS) is an umbrella federation of individual members and 45 affiliated societies. AIBS publishes BioScience, which is written for an informed but not highly technical audience and is thus used extensively in high school biology classes. Theme issues on relevant topics are especially popular. Discounts are offered to teachers for AIBS membership and for registration at the annual convention. The home page at <http://www.aibs.org> has information on discounts, conventions, and the journal and will soon have an education link. It also has links to member organizations.

American Institute of Chemical Engineers

345 E. 47th Street
New York, NY 10017-2395
Phone (212) 705-7338
Fax (212) 705-7812

The American Institute of Chemical Engineers (AIChE) provides career guidance resources about the profession of chemical engineering. An eight-page booklet titled "From Microchips to Potato Chips" is available for $1.00 and describes what chemical engineers do. Videos for a variety of age groups and interests are available for sale and for loan, including one that explores emerging technologies (Frontiers in Chemical Engineering). AIChE is currently working on production of a CD-ROM, video, and printed materials suitable for undergraduate students.

American Institute of Physics

Education Center, One Physics Ellipse
College Park, Maryland 20740-3845
Phone (301) 209-3100
Fax (301) 209-0839
E-mail sps@aip.org

The American Institute of Physics in conjunction with the American Chemical Society produces WonderScience, a hands-on science magazine for children. The institute sponsors chapter, regional, and national meetings of the student Society of Physics and the Sigma Pi Sigma honor society. Career guidance material is also available.

American Lung Association

National Headquarters
1740 Broadway
New York, New York 20001
Phone (800) LUNG USA
Fax none

The mission of the American Lung Association is the prevention of lung disease and the promotion of lung health. To contact any state office, use the 800 number. Each state office can provide material, including literature, video, brochures, and curricula on air pollution, asthma, smoking, and lung diseases, as well as the names of speakers and educational programs. Each state has numerous local offices.

American Lung Association of Arkansas (Little Rock) sponsors Healthy Lungs Month, during which volunteers go to first, fourth, and seventh grades to speak about smoking; sponsors High School Heroes program where trained high school students visit fifth grade to talk about smoking; and has asthma inservice for teachers, Open Airways for Schools program, and summer asthma camps.

American Lung Association of Louisiana (New Orleans) provides materials, including videos on outdoor and indoor air pollution, smoking, and lung health.

American Lung Association of New Mexico (Albuquerque) sponsors the Smoke-free Class of 2000 and has Open Airways for Schools program and summer asthma camps.

American Lung Association of Oklahoma (Oklahoma City) has a mobile health van, has Open Airways for Schools program and summer asthma camps and sponsors some High School Heroes and Freedom from Smoking programs.

American Lung Association of Texas (Austin) sponsors the STARS program (Students Teaching about Risks of Smoking).

American Medical Association

515 North State Street
Chicago, Illinois 60610-4377
Phone (312) 464-4574
Fax (312) 464-5841

The American Medical Association (AMA), in conjunction with the Massachusetts Society of Medical Research, has produced a free resource kit, Communicating Science and Medicine to Children. This kit, designed for K-12 classrooms, includes information on such topics as the scientific process and the use of animals in medical research and also has activities to encourage critical and creative thinking, a coloring book for younger students, and slides.

American Meteorological Society

1701 K Street, N.W., Suite 300
Washington, D.C. 20006
Phone (202) 682-9337
Fax (202) 682-9341

The American Meteorological Society's education program links scientists and teachers in order to attract young people to studies in science, mathematics, and technology. To date it is made up of three projects: Project ATMOSPHERE, DataStreme, and the Maury Project. The core of Project ATMOSPHERE is made up of atmospheric education resource agents (AERAs), precollege teachers trained to be leaders in their local and state educational systems and teacher associations. DataStreme will prepare approximately 4,140 teachers nationally over a five-year period to implement the weather, climate, and other earth science components of the National Science Education Standards. The project will use electronically transmitted environmental data and learning material delivered concurrently in real time. The course will be carried out by local teams of experienced master precollege teachers, college faculty, and professional meteorologists. The Maury Project facilitates teacher enhancement through studies of the physical foundation of oceanography. All three projects involve collaboration with NOAA and NSF, and, in the case of the Maury Project, the United States Naval Academy.

American Nuclear Society

555 North Kensington Avenue
La Grange Park, Illinois 60526
Phone (800) 323-3044
Fax (708) 352-0499
E-mail outreach@ans.org

The American Nuclear Society (ANS) provides classroom and training resources for education on nuclear science, technology, and related issues. Teachers can receive a free subscription to the Re-actions newsletter. K-12 classroom materials and curriculum guides are available, including The Atoms Family activity book for K-5, Energy from the Atom for 5-6, and The Atom and Society, Rays, Radon, and Introduction to Nucleonics for

high school students. ANS can provide teachers with Nuclear Energy Facts—a small question and answer booklet, bookmarks, a radiation dose chart, and pamphlets on low-level nuclear waste. Most materials are reproducible, some are offered free, and others are available at a small cost. Teacher workshops include five-day summer institutes and one-day sessions. These are offered through university student branches and local sections of the society. Contact the national office for information on sessions in your area.

American Physiological Society

9650 Rockville Pike
Bethesda, Maryland 20814-3991
Phone (301) 530-7118
Fax (301) 571-8305

The American Physiological Society (APS), with support from NSF, has a program in physiological research for middle and high school teachers. Each grant involves a teacher in the ongoing research program of an APS member's laboratory. Grants include a stipend, travel allowance, and paid expenses to attend the annual APS conference. The NSF grant also supports teams of researchers and teachers in nine regions who establish free inservice programs for teachers. The national office has more information on this program. Also available is a new book on female role models, including both historical and contemporary women scientists.

American Society for Microbiology

1325 Massachusetts Avenue, N.W.
Washington, D.C. 20005-4171
Phone (202) 737-3600
Fax (202) 942-9329
E-mail EducationResources@asmusa.org

The American Society for Microbiology (ASM) sponsors a week-long summer workshop, Microbial Discovery, for teachers. Workshop participants receive hands-on training and are given textbooks, curriculum guides, and other materials. Other workshops are often presented in conjunction with national professional meetings. The society maintains a network to link science teachers with practicing scientists interested in working with them. ASM also has a reading list of books about microbiology for elementary through high school students, a career booklet on microbiology, a list of venders, a biotechnology textbook for high school, and two posters. The society maintains a home page at <http://www.asmusa.org > which lists available education resources and programs.

American Society of Civil Engineers

Attn: Student Services
1801 Alexander Bell Avenue
Reston, Virginia 22090
Phone (800) 548-ASCE
Fax (212) 705-7300

The American Society of Civil Engineers (ASCE) has prepared Career Guidance Handbook to Educational Programs, Videos, and Resources for its members to use when they are planning career guidance activities in schools. This handbook would also be useful to teachers seeking information, for example, about how math and science and technology are used in solving real problems. The handbook includes both career and science and math materials from many sources. Each resource is rated on audience, time commitment required, cost, and other factors. Programs and videos for females and minorities have also been targeted. ASCE also has available a career booklet and a poster on civil engineering.

American Society of Mechanical Engineers

345 East 47th Street
New York, New York 10017
Phone (212) 705-7722
Fax (212) 705-7143

The American Society of Mechanical Engineers (ASME) provides career guidance information for high school students. Two publications of interest are Mechanical Engineering: A Career of the Future and Mechanical Engineering Technology. ASME also has pamphlets that describe the profession and required preparation at the high school and college levels.

American Society of Plant Physiologists

15501 Monona Drive
Rockville, Maryland 20855-2768
Phone (301) 251-0560
Fax (301) 279-2996
E-mail mosuji@aspp.org

The American Society of Plant Physiologists (ASPP) provides career information and teaching aids on plant physiology. A brochure provides information on plants and their uses for food, beverages, fuel, clothes, medicine, building materials, and decorations. At its annual national meeting, ASPP conducts summer workshops that engage teachers in activities they can take back to their classrooms. The society also provides speakers and sponsors internships at the local level, and plans to work with more school districts to increase interactions among plant scientists and K-12 teachers and students. Contact ASPP for more information about working with a plant scientist in your area. ASPP's World Wide Web site at <http://aspp.org>.

American Solar Energy Society

2400 Central Avenue, #G-1
Boulder, Colorado 80301-2843
Phone (303) 443-3130
Fax (303) 443-3212
E-mail ases@ases.org

Teachers can call the national office of the American Solar Energy Society to find the names and contact information for state or regional chapters. The home page for the organization is <http://www.engr.wisc.edu/centers/sel>

Association of American State Geologists

c/o Thomas Berg, Ohio Geological Survey
4383 Fountain Square Drive
Columbus, Ohio 43224
Phone (614) 265-6988
Fax (614) 268-3669

The Association of American State Geologists (AASG) is an organization of the chief executives of the state geological surveys. AASG has compiled a listing of educational resources produced by all of the state surveys. A home page at <http://www.kgs.ukans.edu/AASG/AASG.html> has a map of the United States, and by clicking on any state you can retrieve the educational resources of that state survey. This service is essentially an on-line version of the Earth Science Education Sourcebook for Teachers and Students and is a quick reference for teachers seeking geological resources for their classrooms. The list includes field trip guides, maps, textbooks, science articles, mineral sample kits, etc. Some state surveys have print versions of the sourcebook. A home page can be found at <http://www.kgs.ukans.edu/AASG/>.

Association of Science and Technology Centers

1025 Vermont Avenue, N.W.
Washington, D.C. 20005
Phone (202) 783-7200
Fax (202) 783-7207

The Association of Science and Technology Centers (ASTC) provides conferences, institutes, and symposia for its members—museums and science centers and their staffs. A newsletter informs members about program initiatives, and a Teacher Educators Network links museum educators who are involved in providing teacher inservice. ASTC publishes sourcebooks and how-to manuals for everything from exhibit design and construction to the ways children learn in museums. The ASTC World Wide Web Home Page is <http://www.astc.org/astc/>.

Crop Science Society of America

677 South Segoe Road
Madison, Wisconsin 53711-1086
Phone (608) 273-8080
Fax (608) 273-2021

The Crop Science Society of America publishes Experiments in Crop Science, a series of eight investigations to demonstrate field crop growth, development, and production for junior and senior high school students. Each experiment includes teacher and student guides, a series of questions, and lists of materials needed to carry out the experiment and of sources for those materials.

Denver Earth Science Project

Office of Special Programs and Continuing Education
Colorado School of Mines
Golden, Colorado 80401
Phone (800) 446-9488
Fax (303) 273-3314
E-mail jproud@mines.edu

The Denver Earth Science Project (DESP) is, despite its name, a national K-12 curriculum development effort coordinated by the Colorado School of Mines. Curriculum modules have been developed by teams of experienced earth science teachers and practicing scientists from corporations, federal agencies, or institutions of higher education. Modules focus on integration of earth science and math and stress hands-on activities using real data and real problems. Those developed include Oil and Gas Exploration (7-12), Ground Water Studies (7-9), Paleontology and Dinosaurs (7-10), and Energy: A Closer Look at Oil and Gas (4-6). In order to receive the modules, teachers must attend training workshops, which are offered throughout the country. Local corporate sponsors generally pay the workshop fees, so costs to teachers and school districts are minimal. The kits received when training ends include all of the materials required to teach the module. DESP's home page is <http://magma.MINES.EDU/Outreach/Cont_Ed/desp.shtml>.

Geological Society of America

P.O. Box 9140
3300 Penrose Place
Boulder, Colorado 80301
Phone (303) 447-2020
Fax (303) 447-1133
E-mail vharsh@geosociety.org

The Geological Society of America (GSA) is becoming increasingly involved in partnership building to link educators to expertise in environmental science, meteorology, and the geosciences. Teachers can request a teacher's resource packet with information on the society, including special membership rates for teachers, and an eight-page listing of earth science education resources. The Partners for Education Program provides teachers and

scientists with names of partners in their states. Career packets in geosciences are available on request; the GSA also sells a video called The Earth HAS a History and can send a single copy of a textbook, The Dynamic Earth, for the cost of shipping. The World Wide Web home page location is <http://www.aescon.com/geosociety/index.html>.

International Technology Education Association

1914 Association Drive
Reston, Virginia 22091-1502
Phone (703) 860-2100
Fax (703) 860-0353
E-mail itea@tmn.com

The International Technology Education Association (ITEA) seeks to advance the technological capabilities of all, to nurture and promote the professionalism of those engaged in technology education, and to improve public understanding of the profession and its contributions. Members receive The Technology Teacher, an ITEA journal, and an annual catalog of technology education suppliers and publications; they also have access to the association's job placement service, scholarships, and an awards program that recognizes excellence at every level of technology education. Currently, ITEA is developing national standards for K-12 technology education. A conference is held each spring. A page on the World Wide Web gives more information about the organization at <http://www.tmn.com/Organizations/Iris/ITEA.html>.

Laser Institute of America

12424 Research Parkway, Suite 125
Orlando, Florida 32826
Phone (407) 380-1553
Fax (407) 380-5588
E-mail lia@admin.creol.vcf.edu

The Laser Institute of America (LIA) fosters understanding of lasers and their applications and safety worldwide through publications and training courses. Publisher of standards for safe use of lasers, the LIA also has publications and videos on lasers in industry, medicine, and communication, as well as conference proceedings from research symposia. The World Wide Web address is <http://www.creol.ucf.edu/~lia/>.

National Arborist Association

P.O. Box 1094
Amherst, New Hampshire 03031
Phone (603) 673-3311
Fax (603) 672-2613

The National Arborist Association is a trade association for people who take care of trees. Teachers who are interested in activities and information on trees, tree biology, and care of trees can contact the association for information; some members may be available to speak to students.

National Association of Biology Teachers

11250 Roger Bacon Drive, Suite 19
Reston, Virginia 22090
Phone (800) 406-0775
Fax (703) 435-5582
E-mail nabter@aol.com

The National Association of Biology Teachers (NABT) publishes a teaching magazine, The American Biology Teacher, eight times a year. It also publishes monographs and puts on teacher workshops and a national convention. A 1995 publication, Biology on a Shoestring, describes inexpensive, inquiry-driven labs for secondary science teachers. A project under development, Operation Biology, will identify resources, national standards, and benchmarks to help elementary teachers put their own curricula together and create frameworks that tie in with the standards. NABT has a brochure of programs and publications of interest to teachers.

National Association of Conservation Districts

P.O. Box 855
League City, Texas 77574
Phone (800) 825-5547
Fax (713) 332-5259

The National Association of Conservation Districts can put teachers in touch with their local soil and water conservation districts. Some local districts offer teacher scholarships for training opportunities, offer technical assistance with the development of outdoor classroom, and participate in teacher workshops, such as Projects WILD, WET, and Learning Tree. A catalog of products from the association includes videos, comic books, games, and other materials. The association sponsors a fundraising program for schools, Get Growin'. Through this program, students can sell trees, shrubs, and other natural products to raise funds for their class or school.

National Audubon Society

700 Broadway
New York, New York 10003
Phone (212) 979-3183
Fax (212) 979-3148

The National Audubon Society produces Audubon Adventures, an interdisciplinary environmental program to enhance curriculum for grades four to six. Materials includes student newspapers and a teacher's resource manual that covers the six selected topics for the year, such as songbirds, pond life, snakes, wildflowers (one-year subscription, $35/classroom). A series of curriculum guidebooks, Living Lightly in the City (K-3 and 4-6) and Living Lightly on the Planet (7-9 and 10-12), may be purchased. These books include resource material, student activity sheets, projects, and action-oriented activities. The society also conducts workshops and camps for students and adults and has produced videos that are available from several sources. Information on Audubon activities and resources is listed on the society's home page, <http://www.audubon.org/audubon/>.

National Earth Science Teachers Association

2000 Florida Avenue, N.W.
Washington, D.C. 20009
Phone (202) 462-6910
Fax (202) 328-0566
E-mail fireton@agu.org

National Earth Science Teachers Association (NESTA) is a membership organization ($15 a year). Its quarterly publication is Earth Science. Each year a special issue published in early spring lists summer school possibilities for teachers. NESTA has scripted slide sets available for purchase. Call for a listing and description of these sets. NESTA hosts special sessions at all National Science Teachers Association (NSTA) regional and national meetings and at Geological Society of America (GSA) meetings.

National Rural Electric Co-op Association

4301 Wilson Boulevard
Arlington, Virginia 22203
Phone (703) 907-5500
Fax (703) 907-5516

The National Rural Electric Co-op Association (NRECA) represents more than 1,000 consumer-owned electric cooperatives. NRECA produces material on electrical safety and how electricity works, as well as on how cooperatives function. A product guide describes the publications and videos available for sale (some videos are for loan). Local cooperatives offer a limited number of teacher workshops. The Rural Electric Youth Tour brings about 1,300 high school students to Washington, D.C., each year for a week of all-expense-paid activities that include tours and opportunities to learn about cooperatives and about electricity. The program is sponsored and coordinated by the state associations. Local cooperatives select students through an essay contest or interview procedure.

National Science Teachers Association

1840 Wilson Boulevard
Arlington, Virginia 22201
Phone (703) 243-7100
Fax (703) 243-7177

National Science Teachers Association (NSTA) is a professional organization for science educators from kindergarten to college. Members receive one or more journals: Science and Children, Science Scope (for middle school), Science Teacher (for high school), and the Journal of College Science Teaching. Members also receive an annual suppliers' directory, a catalog of science-related publications and products, and access to job placement, certification, and extensive awards programs. NSTA Reports! is a newspaper published six times a year. NSTA maintains a computer bulletin board linked to each state science supervisor as well as to thousands of science educators nationwide. An annual national convention and several regional conventions bring science teachers together for workshops and seminars. Four-week summer institutes are held at various locations throughout the country. NSTA's major science curriculum reform project for grades 9 through 12 is Scope, Sequence, and Coordination. NSTA has a home page on the World Wide Web at <http://www.nsta.org>.

National Society of Professional Engineers

1420 King Street
Alexandria, Virginia 22314-2794
Phone (703) 684-2811
Fax (703) 836-4875
E-mail customer.service@nspe.org

The National Society of Professional Engineers (NSPE) sponsors two major school competition programs, the Junior Engineering Technical Society (JETS), an engineering competition for grades 6 and up, and MathCounts, a secondary mathematics competition. Both programs charge a fee for groups to participate. For more information about those programs, contact staff at JETS (703) 548-5387, and at MathCounts (703) 684-2828, Internet: mathcounts@nspe.org. NSPE also provides a nationwide outreach program to encourage its members to come to local schools. Find out more about National Engineers Week through the Internet, eweek@nspe.org, or through the year-round hotline at (703) 684-2852. The NSPE Education Division can be contacted at (703) 684-2811, ext. 2833 (or on Internet at pee@nspe.org) for more information on members' projects with schools.

National Speleological Society

2813 Cave Avenue
Huntsville, Alabama 35810-4431
Phone (205) 852-1300
Fax (205) 851-9241
E-mail nss@caves.org

The National Speleological Society (NSS) offers a resource library including videos, slides, and brochures on caves and bats. NSS cosponsors Project Underground, a multidisciplinary environmental program for K-12 teachers. Project Underground promotes student understanding of life and earth sciences and ecology related to caves and karstlands (geophysical areas characterized by sinkholes). Teachers who attend a training workshop receive an activity guide with classroom projects, discussions, and lesson plans. Information on Project Underground can also be obtained by writing P.O. Box 13079, Richmond, VA 23225, or by e-mail, rass@richmond.infi.net, or by phone (804) 288-4226. The World Wide Web page for NSS is <http://www.caves.org/~nss/>.

National Wildlife Federation

8925 Leesburg Pike
Vienna, Virginia 22184-0001
Phone (703) 790-4000
Fax (703) 442-7332

The National Wildlife Federation (NWF) publishes magazines for members of all ages: Your Big Back Yard (preschool), Ranger Rick (ages 6-12), and National Wildlife and International Wildlife (for teens and adults). The NatureScope Series is made up of activity guides on many topics. Animal Tracks is a multidisciplinary, hands-on, action-oriented conservation program with an activity guide for elementary and middle school teachers and a book for kids. NWF produces a packet of information that includes posters, stamps, and an activity guide to be used during Wildlife Week, the third week in April, in conjunction with Earth Week. The annual Conservation Directory lists organizations, agencies, and officials concerned with natural resources (more than 500 pages, about $25). NWF offers the NatureQuest training program for outdoor educators and teachers. These three-day workshops teach participants how to incorporate nature studies into their curriculum; they also receive a resource kit. The NWF home page is <http://www.nwf.org/nwf>.

North American Association for Environmental Education

Publications and Membership Office
P.O. Box 400
Troy, Ohio 45373
Phone (513) 676-2514
Fax (513) 676-2514

The North American Association for Environmental Education (NAAEE) is a network of professionals and students working in environmental education throughout North America and in more than 40 countries. Members receive a bimonthly newsletter of environmental education opportunities and other information. Other publications include books of teaching strategies, case studies, ideas, and activities, resource catalogs, conference proceedings, and papers. Additionally, NAAEE publishes Environmental Issues Forum (EIF) materials—discussion guides and support materials designed to help people talk about environmental solutions. NAAEE sponsors the Volunteer-led Investigations of Neighborhood Ecology (VINE) program for urban children. NAAEE also maintains a data base of members willing to share expertise and experience, conducts training workshops, provides technical assistance, and holds annual conferences.

SEPM Society for Sedimentary Geology

1731 East 71st Street
Tulsa, Oklahoma 74136
Phone (918) 493-3361
Fax (918) 493-2093
E-mail ekelley@galstar.com

SEPM is a professional organization of sedimentary geologists. They have compiled three spiral-bound notebooks of earth science activities for K-12 students, which are sold at cost. A Sedimentary Geologists' Guide to Helping K-12 Earth Science Teachers ($5) is a random collection of short articles (how to lead field trips for young students, how to present science in an elementary class, ideas about partnering with school teachers) and activities especially for scientists who are visiting a classroom. Hands on Geology: K-12 Activities and Resources ($6) is a collection of activities, including background information, and resources, such as catalogs, organizations, books, and videos. On the Rocks: Earth Science Activities for Grades 1-8 ($9) is a longer, more organized book of activities that includes sections on rocks, earth, water, maps, and geology, society, and the environment.

Society of Manufacturing Engineers

P.O. Box 930
One SME Drive
Dearborn, Michigan 48121
Phone (313) 271-1500
Fax (313) 240-8255
E-mail new@sme.org

The Society of Manufacturing Engineers (SME) provides sixth- through eighth-grade teachers with an activity book that illustrates how science and technology affect manufacturing science. Send a self-addressed 9" x 12" envelope with three stamps postage to the attention of Mary Krome, Discover How Things Are Made, to receive this book. The organization also has, for a fee, poster sets for grades 3 through 8; these sets include classroom activities. A free flyer on manufacturing engineering as a career is also available. The National Engineers Week home page can be found on SME's home page at <http://www.sme.org>.

Society of Women Engineers

120 Wall Street, 11th Floor
New York, New York 10005-3902
Phone (212) 509-9577
Fax (212) 509-0224

The Society of Women Engineers has career guidance brochures that describe engineering as a profession, including Engineering: The Career of the Future and Career in Aerospace Engineering. It also has information on high school preparation for engineering careers. The society has affiliates throughout the country, and members may be available as speakers. Scholarships are offered; information may be obtained from the national or local offices. The society's home page is <http://www.swe.org>.

Terrene Institute

4-B Herbert Street
Alexandria, Virginia 22305
Phone (703) 548-5473
Fax (703) 548-6299
E-mail Terrene@gnn.com

A nonprofit, nonadvocacy organization, the Terrene Institute links corporate, government, and academic people to work to prevent pollution and protect watersheds. The institute ia a clearinghouse and facilitator for watershed information. An environmental catalog lists technical and citizen products and publication—brochures, handbooks, posters, and fact sheets. An interactive educational model, EnviroScape, demonstrates how land activities affect water quality. The Watershed Management Game is suitable for older students. Terrene Institute has a home page at <http://www.e2b2.com>.

World Wildlife Fund

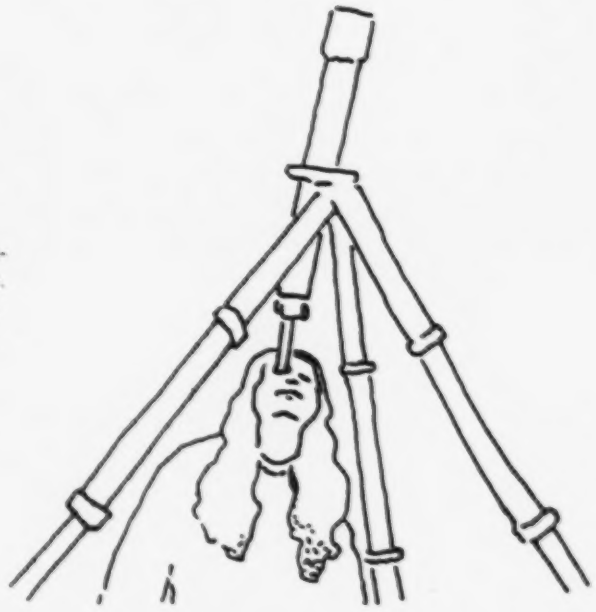
1250 24th Street, N.W.
Washington, D.C. 20037
Phone (202) 293-4800
Fax (202) 293-9211

The World Wildlife Fund (WWF) is a membership organization that sponsors conservation projects to preserve the diversity and abundance of life on earth and the health of ecological systems. WWF can provide free fact sheets on some endangered species; a rainforest video is available for sale. For the $15 annual membership fee, members receive the newsletter, Focus. WWF's home page, <http://www.panda.org>, has numerous links, including Kids and Teachers, with fact sheets on-line, a photo gallery, and information about various education projects around the world.

Zero Population Growth

1400 16th Street, N.W. , Suite 320
Washington, D.C. 20036
Phone (202) 332-2200
Fax (202) 332-2302
E-mail zpgpoped@igc.apc.org

Zero Population Growth (ZPG) provides teaching materials, including Counting on People (K-6), Earth Matters (9-12), and For Earth's Sake (6-10), which are interdisciplinary resources of hands-on activities and readings. A free catalog describes these materials. The video World Population comes with an activity guide. ZPG offers teacher workshops, tailored to the needs of the participants, throughout the country.



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